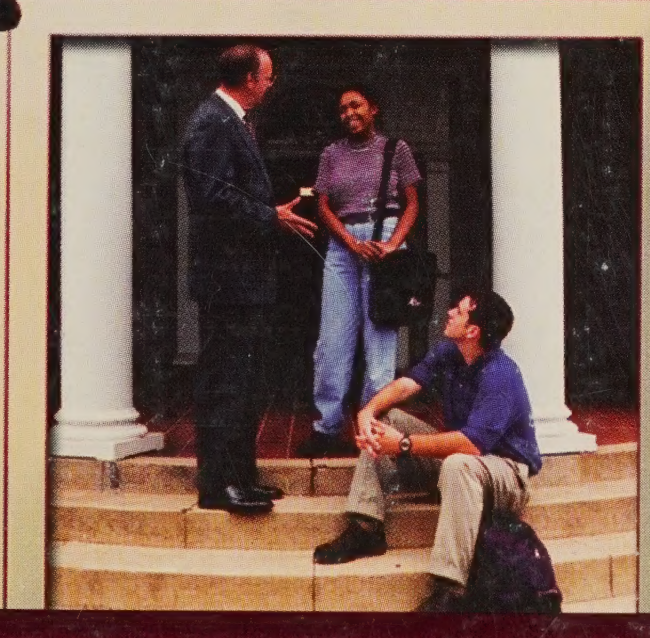
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Asheville-Buncombe Technical Community College

www.asheville.cc.nc.us

Catalog of Courses
Day and Evening College
Volume 40
2002-2003

Asheville Campus
340 Victoria Road
Asheville, NC 28801

Phone: 828/254-1921

TDD: 254-1921, Ext. 444
or depress space bar
several times for
operator assistance

Enka Campus
P.O. Box 1739
Enka, NC 28728

1459 Sand Hill Road
Asheville, NC 28806

Phone: 828/254-1921,
Ext. 5801

Madison Campus
4646 U.S. Hwy. 25-70
Marshall, NC 28753

Phone: 828/649-2947
Fax: 828/649-3174

Recognized and approved by:
- North Carolina Community College System
- North Carolina State Board of Education
- North Carolina Office of Emergency Medical Services
- Division of Vocational Rehabilitation
- And for Veterans Participation

Accredited by:
- American Dental Association
- Commission on Dental Accreditation
- Joint Review Committee on Education in Radiologic Technology
- National Accrediting Agency for Clinical Laboratory Sciences
- North Carolina Board of Nursing

Asheville-Buncombe Technical Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097:Telephone number 404-679-4501) to award Associate degrees.

Catalog changes
This catalog should not be considered a contract between Asheville-Buncombe Technical Community College and the student. Adjustments in program/course content, sequence, schedule, and faculty may be made as necessary. A minimum enrollment may be required to offer a course or continue a program. Charges for tuition/fees are subject to change. The College Calendar dates/events may change because of inclement weather or for other reasons. If changes become necessary, efforts will be made to inform those who are involved.

College Programs

Program	Credential	Schedule
Accounting	A.A.S. Degree	Day/Evening
Accounting Level 1	Certificate	Day
Accounting Level 2	Certificate	Day
Air Conditioning, Heating and	A.A.S. Degree	Evening
Refrigeration Technology	Diploma	Day/Evening
Air Conditioning and Heating		
Basic	Certificate	Day/Evening
Intermediate	Certificate	Day/Evening
Advanced	Certificate	Evening
Associate Degree Nursing	A.A.S. Degree	Day/Evening
Automotive Systems Technology	A.A.S. Degree	Day
Automotive Systems Technology	Diploma	Evening
Automotive	Certificate	Day
Basic Law Enforcement Training	Certificate	Day/Evening
Business Administration	A.A.S. Degree	Day/Evening
CAD Systems Management	A.A.S. Degree	Day/Evening
CAD	Certificate	Day/Evening
Carpentry	Diploma	Day/Evening
Civil Engineering Technology	A.A.S. Degree	Day/Evening
College Transfer:		
Associate in Arts	A.A. Degree	Day/Evening
Associate in Science	A.S. Degree	Day/Evening
Computer Engineering Technology	A.A.S. Degree	Day/Evening
Computer Programming	A.A.S. Degree	Day/Evening
Criminal Justice Technology	A.A.S. Degree	Day/Evening
Culinary Technology	A.A.S. Degree	Day
Baking and Pastry Arts	Certificate	Day
Customer Service	Certificate	Day/Evening
Dental Assisting	Diploma	Day
Dental Hygiene	A.A.S. Degree	Day
Early Childhood Associate	A.A.S. Degree	Day
Early Childhood Associate	Certificate	Day/Evening
Electrical/Electronics Technology	A.A.S. Degree/Diploma	Evening
Electronic Servicing Technology	Diploma	Evening
Electronics Engineering Technology	A.A.S. Degree	Day/Evening
Emergency Medical Science	A.A.S. Degree	Day
Fire Protection Technology	A.A.S. Degree	Evening
	Certificate	Evening

General Occupational Technology	A.A.S. Degree/Diploma	Day/Evening
*Health Information Technology	A.A.S. Degree	Day
Medical Coding	Diploma	Day
Medical Terminology	Certificate	Day
Heavy Equipment and	Diploma	Day
Transport Technology	A.A.S. Degree	Evening
Hotel and Restaurant Management	A.A.S. Degree	Day
Hospitality Management	Certificate	Evening
Information Systems	A.A.S. Degree	Day/Evening
Machining Technology	A.A.S. Degree	Evening
Machining Technology	Diploma	Day/Evening
Marketing and Retailing	A.A.S. Degree	Day/Evening
Mechanical Engineering Technology	A.A.S. Degree	Day/Evening
Medical Laboratory Technology	A.A.S. Degree	Day
Medical Office Administration	Diploma	Day/Evening
Medical Sonography	A.A.S. Degree	Day
Medical Transcription	Diploma	Day/Evening
Microcomputer Applications	Certificate	Day
Networking Technology	A.A.S. Degree	Day/Evening
Cisco Certified Network Associate	Certificate	Day
Networking	Certificate	Day
Office Systems Technology	A.A.S. Degree/Diploma	Day
Word Processing/Desktop Publishing	Certificate	Day/Evening
Operations Management	A.A.S. Degree	Evening
Quality Technology	Certificate	Evening
PC Installation and Maintenance	Certificate	Day
PC and Network Maintenance	Certificate	Evening
Phlebotomy	Certificate	Day
Practical Nursing	Diploma	Day
Radiography	A.A.S. Degree	Day
Real Estate	Certificate	Evening
Real Estate Appraisal	Certificate	Evening
Social Services	A.A.S. Degree	Day/Evening
*Surgical Technology	Diploma	Day
Surveying Technology	A.A.S. Degree	Day/Evening
Tool, Die and Mold Making	A.A.S. Degree	Day/Evening
Welding Technology	A.A.S. Degree	Day/Evening
	Diploma	Day/Evening
	Certificate	Day/Evening

*Pending NCCCS State Board Approval

Directory of College Services and Offices

Academic Programs ..... Vice President, Instructional Services
Simpson Administration Building, Ext. 120

ADA Coordinator ..... Director of Personnel
Azalea Building, Ext. 113

Admissions ..... Admissions Office, Student Services
Azalea Building, Exts. 144, 145, 210

Allied Health and Public Service Education ..... Dean
Rhododendron Building, Ext. 250

Arts and Sciences ..... Dean
Elm Building, Ext. 310

Books ..... Bookstore
Oak Gym/Student Center, Exts. 200, 208

Business and Hospitality Education ..... Dean
Birch Building, Ext. 240

Business and Industry Services ..... Dean
Sunnicrest Building, Ext. 345

Continuing Education and Off-campus Programs ..... Associate Vice President
Pines Building, Ext. 130

Counseling ..... Counselors, Student Services
Azalea Building, Exts. 146, 206, 434

Disabled Student Services ..... Coordinator of Special Needs, Student Services
Azalea Building, Ext. 141

Emergencies ..... Ext. 125 or 9-911

Engineering and Applied Technology ..... Dean
Dogwood Building, Ext. 220

Financial Aid ..... Financial Aid Office
Azalea Building, Ext. 162

GED Preparation ..... Pines Building
Ext. 132

GED Test Scheduling ..... Basic Skills Office
Pines Building, Exts. 132, 137

GED Test Results/Transcripts ..... GED Examiner
Pines Building, Ext. 312

Grade Changes ..... Class Instructor

International Student Services ..... Director of Enrollment Management
Azalea Building, Ext. 147

Job Placement ..... ESC Representative
Exts. 171, 172

Learning Resources Center ..... Director
Holly Building, Ext. 301

Madison County Campus ..... Director
Marshall, 828/649-2947

News, Publications ..... Director of Communications
Simpson Administration Building, Ext. 117

Parking Permits ..... Accounting Clerk/Cashier
Simpson Administration Building, Ext. 152

Payments, Student Accounts ..... Business Office
Simpson Administration Building
Exts. 152, 156, 166

Security ..... Pines Building
Ext. 165

Student Academic Records, Transcripts, Registration, Drop/Add Classes ..... Student Records and Registration
Student Services, Azalea Building
Exts. 148, 204, 291, 494

Student Activities and Intramurals ..... Director of Student Activities
Oak Gym/Student Center, Ext. 203

Transfer Credits/Transcript Evaluation (Transfer to A-B Tech) ..... Coordinator of Academic Advising and Special Projects, Student Services
Azalea Building, Ext. 202

Transfer-to-Senior-Institution Information ..... Transfer Advisor, Student Services
Azalea Building, Ext. 441

Tutoring ..... Class Instructor

Veterans ..... Veteran's Service Office
Azalea Building, Ext. 206

Visiting the Campus ..... College Recruiter, Student Services
Azalea Building, Ext. 203

Address correspondence to the appropriate office in care of:
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, NC 28801

Tel: 828/254-1921
Fax: 828/251-6355
Internet: www.asheville.cc.nc.us

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Enrollment will determine offering or continuing a curriculum.
*Curricula offered during day and evening hours.

College Calendar 2002-2003

Fall Semester — 2002

Registration: Current and continuing students	July 15-19
Registration: New classified students	July 22-24
Registration continues for all students	July 25-Aug. 14
Financial aid recipients charge tuition and fees	Aug. 13
New student welcome	Aug. 14
Classes begin	Aug. 15
Mini-mester I	Aug. 15-Oct. 10
Last day for late registration	Aug. 21
Last day to drop for a partial refund	Aug. 26
Professional development — 1/2 day	Sept. 19
Mini-mester II	Oct. 11-Dec. 12
Fall break	Oct. 14-15
Last day to withdraw from a 16-week class without penalty	Nov. 11
Thanksgiving break	Nov. 27-29
Last day of class/examinations*	Dec. 12
Total class days	80
Holidays: Labor Day	Sept. 2
Thanksgiving	Nov. 28-29
Christmas and New Year's holidays	Dec. 23-Jan. 1

Spring Semester — 2003

Registration: Current and continuing students	Nov. 18-22
Registration: Continues for all students	Dec. 2-20, Jan. 2-7
Financial aid recipients charge tuition and fees	Jan. 6
New student welcome	Jan. 7
Classes begin	Jan. 8
Mini-mester I	Jan. 8-March 5
Last day for late registration	Jan. 14
Last day to drop for a partial refund	Jan. 17
Professional development — 1/2 day	Feb. 20
Mini-mester II	March 6-May 9
Spring break**	March 24-28
Last day to withdraw from a 16-week class without penalty	April 9
Last Day of class/examinations	May 9
Total class days	80
Holidays: Martin Luther King, Jr.	Jan. 20
Good Friday	April 18
Easter Monday	April 21

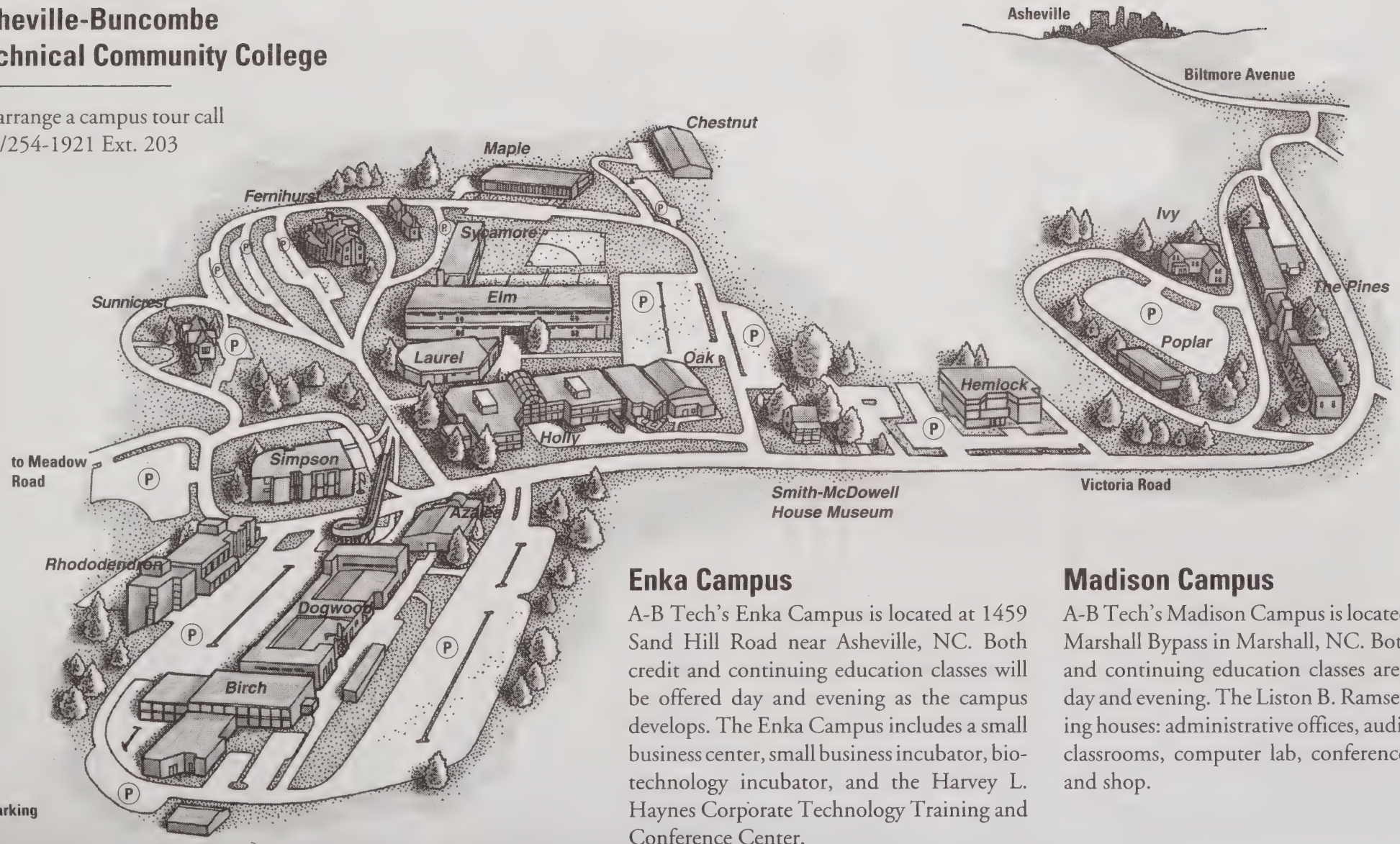
Summer Term — 2003

Registration: Current and continuing students	April 28-May 2
Registration: Continues for all students	May 5-16
Financial aid recipients charge tuition and fees	May 15
New student welcome	May 16
Classes begin	May 19
Last day to apply for graduation	May 21
Last day for late registration	May 21
Last day to drop for a partial refund	May 23
Last day to withdraw from a 10-week class without penalty	July 10
Last day of class/examinations	July 28
Graduation	Aug. 1
Total Class Days	50
Holiday: Independence Day	July 4

*Up to three days may be made up at the end of the semester for inclement weather.
**Up to three days may be made up during Spring break for inclement weather.
All dates in this calendar are subject to change.

Asheville-Buncombe Technical Community College

To arrange a campus tour call
828/254-1921 Ext. 203



Enka Campus

A-B Tech's Enka Campus is located at 1459 Sand Hill Road near Asheville, NC. Both credit and continuing education classes will be offered day and evening as the campus develops. The Enka Campus includes a small business center, small business incubator, biotechnology incubator, and the Harvey L. Haynes Corporate Technology Training and Conference Center.

Madison Campus

A-B Tech's Madison Campus is located on the Marshall Bypass in Marshall, NC. Both credit and continuing education classes are offered day and evening. The Liston B. Ramsey Building houses: administrative offices, auditorium, classrooms, computer lab, conference room, and shop.

Buildings Legend

Main Campus Facilities

Thomas W. Simpson Administration Building
- Administrative Services
- Business Office
- College Relations Office
- Elevated Lecture Room
- Foundation Office
- Instructional Services
- Office of the President
- Public Information Office
- Research and Planning Office

Azalea Building
- ADA Coordinator
- Admissions Office
- Career Center
- Counseling Offices
- Disability Services
- Employee and Organization Development Director
- Enrollment Management
- Financial Aid Office
- International Student Services
- Personnel Office
- Placement Testing
- Student Records and Registration
- Veterans Representative

Birch Building
- Accounting
- Business Administration
- Computer Programming
- Culinary Technology
- Customer Service
- Dining Room
- Health Information Technology*
- Hotel and Restaurant Management
- Information Systems
- Marketing and Retailing
- Medical Coding
- Medical Office Administration
- Medical Transcription
- Microcomputer Applications
- Mountain Tech Lodge
- Networking Technology
- Office Systems Technology
- Operations Management
- Quality Technology
- Real Estate
- Real Estate Appraisal
- Word Processing/Desktop Publishing

Chestnut Building
- Plant Operations Office
- Receiving

Dogwood Building
- Air Conditioning, Heating, and Refrigeration Technology
- Automotive Systems Technology
- Carpentry
- Electrical/Electronics Technology
- Heavy Equipment and Transport Technology
- Machining Technology
- Tool, Die, and Mold Making
- Welding Technology

Elm Building
- CAD Systems Management
- Civil Engineering Technology
- Electronic Servicing Technology
- Electronics Engineering Technology
- English/Communications
- Humanities/Fine Arts
- Mathematics
- Mechanical Engineering Technology
- Surveying Technology

Fernihurst
- Continuing Education Classes
- Human Resources Development Program

Hemlock Building
- Basic Law Enforcement Training
- Criminal Justice Technology
- Early Childhood Associate
- Emergency Medical Science
- Fire Protection Technology
- Social Services

Holly Learning Resources Center
- Audiovisual Services
- Library

* Pending NCCCS State Board Approval

Ivy Building
- Continuing Education Classes
- Decorative Restoration

Laurel Building
- Auditorium
- Developmental Studies
- Social/Behavioral Sciences

Maple Building
- Flexible Automated Manufacturing Training Center
- Continuing Education Classes
- New Industry Training

Oak Gym/Student Center
- Bookstore
- Health and Physical Education
- Intramurals
- Job Placement Office
- Recruiter
- Snack Bar
- Student Government Association

Pines Building
- Adult Basic Education (ABE)
- Adult High School
- Compensatory Education
- Continuing Education Administrative Offices
- Continuing Education Classes
- General Education Development (GED)
- Security Office

Poplar Building
- Child Care Center

Rhododendron Building
- Administrative Computer Services
- Associate Degree Nursing
- Dental Assisting
- Dental Hygiene
- Medical Laboratory Technology
- Medical Sonography
- Phlebotomy
- Practical Nursing
- Radiography
- Surgical Technology*

Smith-McDowell House Museum
(Leased to WNC Historical Association)
- Museum of WNC History

Sunnicrest
- Business and Industry Services
- Focused Industrial Training
- Occupational Extension
- Quality Program

Sycamore Building
- Biology
- Chemistry/Physics
- Video Conference Center

* Pending NCCCS State Board Approval

Organization

History

Asheville-Buncombe Technical Community College has served as the community's premier technical educator for many years. Originally funded by a bond election, the institution was established Sept. 1, 1959, and named the Asheville Industrial Education Center.

Following legislation creating the North Carolina System of Community Colleges that was enacted in 1963 by the General Assembly, the name was changed on Jan. 27, 1964, to Asheville-Buncombe Technical Institute. This legislation enabled the College to confer the Associate in Applied Science degree for the first time at graduation ceremonies in August 1964.

The Board of Trustees approved a third name change to Asheville-Buncombe Technical College on Aug. 6, 1979. A final name change occurred Nov. 2, 1987, when the Board of Trustees approved Asheville-Buncombe Technical Community College, an action which became official when endorsed by the Buncombe County Commissioners on Nov. 3, 1987.

In October 1988 the College received approval to offer associate degree programs and in September 1989 enrolled its first class for the Associate in Science degree. The Associate in Arts degree was first offered during summer quarter 1990-91.

On Jan. 18, 1990, A-B Tech officially opened a satellite campus in Madison County. The College had served the county out of temporary quarters at the Marshall Elementary School since Dec. 12, 1984.

In its early years, the College administered the operation of four units located throughout Western North Carolina. These units have gained independent status and are now fully accredited community colleges.

By the fall term of 1997, the College had reengineered all programs and converted to the semester system.

On Oct. 23, 2000, BASF Corporation donated nearly 37 acres and three buildings to A-B Tech to establish a satellite campus in Enka that includes a small business incubator and a corporate technology training and conference center.

Administration

The College was initially administered by the Asheville City School Board of Education. Following the establishment of the North Carolina System of Community Colleges, control passed to an independent board of trustees.

From the beginning, prominent Asheville and Buncombe County business and community leaders have helped to guide the College. In addition, each academic program has an advisory committee made up of local practitioners. Several hundred local citizens provide guidance for the educational programs of the College.

Curricula

The first program offered by the College was Practical Nursing. Electronics Engineering Technology and the Machinist programs were started in 1960. These three curricula are still offered along with many other career and College transfer programs.

The College offers the Associate in Arts, the Associate in Science, and the Associate in Applied Science degrees, diplomas, and certificates.

The Associate in Arts and Associate in Science degree programs are offered in the Division of Arts and Sciences. All career curricula and courses are offered through three divisions: Allied Health and Public Service Education, Business and Hospitality Education, and Engineering and Applied Technology. In addition, noncredit academic, avocational, practical skills, and occupational classes and activities are offered through the Continuing Education Division.

Continuing Education courses are generally offered, with sufficient enrollment, on demand. Curriculum courses are usually offered on planned schedules in both the day and evening/weekend programs. Many curriculum classes are also offered in *clusters* for *unclassified* students. Some Continuing Education courses—including Adult Basic Education, Human Resources Development, New and Expanding Industry Training, Small Business Center, Total

Quality Management, and Focused Industrial Training activities—are ongoing or are repeated on a regular basis.

Both curriculum and Continuing Education programs are supported through the activities of the GED Testing program, Guided Studies, and the Learning Resources Center. Classes meet on campus and at various off-campus sites. Course requirements are the same without regard to meeting times or locations.

Campus Facilities

On March 15, 1961, the Industrial Education Center moved into two newly constructed buildings off Victoria Road. Over the years the Board of Trustees has acquired land that today totals 144 acres.

Twenty-one buildings house academic programs and campus services. Included in this total is the Smith-McDowell House, the oldest brick house in Buncombe County, leased to the Western North Carolina Historical Association.

On Jan. 18, 1990, the College established a campus in Madison County. The satellite operation provides adult education and College credit courses for the people of Madison County.

Over the years a combination of special funding has provided for campus expansion. Since 1985 the North Carolina General Assembly has approved $5 million in special legislation for campus construction.

Since 1987, Buncombe County voters have approved $13.5 million in bonds to be used for campus additions and renovations. In statewide bond referendums, voters approved $5 million in 1993 and $14 million in 2000 for capital projects at A-B Tech.

Buncombe County Commissioners purchased for A-B Tech property belonging to St. Genevieve Gibbons Hall, a private school that merged with Asheville Country Day School to form the Carolina Day School. The Board of Trustees acquired the title to these 12.77 acres and four buildings on Sept. 23, 1987. Additionally, in 1990 the Commissioners purchased 16.75 acres contiguous to the west boundaries of the campus. This purchase included Sunnicrest, the only remaining lodge constructed by George Vanderbilt. The lodge has been renovated to house the Business and Industry Services Division offices.

On Oct. 21, 1987, A-B Tech in cooperation with Buncombe Child Development opened a Child Care Center, which offers day service to students and faculty.

On Oct. 23, 2000, BASF Corporation donated nearly 37 acres and three buildings to A-B Tech to establish a satellite campus in Enka that includes a small business incubator and a corporate technology training and conference center.

Current Status

A-B Tech, with strong local support, has grown in facilities and land acquisition, in enrollment, in curricula, and in expanded services to the community. The College has the largest total headcount enrollment of any institution of higher education in Western North Carolina, serving more than 24,300 in 2000-2001.

Location

The main campus is located off Victoria Road in Asheville, North Carolina, a city repeatedly named as one of the most livable towns in America.

Situated near major interstates and on local bus routes, the College is convenient to the citizens it serves. Ample parking close to class buildings is provided free on campus. The Madison Campus is located in Marshall, NC. The Enka Campus is located in the Enka community near Asheville, NC.

College Mission Statement

A-B Tech, the community's college, is dedicated to student success. As a comprehensive community college, A-B Tech is committed to providing accessible, quality educational opportunities for lifelong learning to meet the diverse and changing needs of our community.

Divisional Objectives

Allied Health and Public Service

The Allied Health and Public Service Education Division provides students with opportunities at the postsecondary level to acquire knowledge, skills, and attitudes that will enable them to become effective and safe members of health care and public service teams.

Arts and Sciences

The objective of the Division of Arts and Sciences is to provide, in a learning-centered environment, academic instruction which enables students to acquire A.A. or A.S. degrees (including pre-majors), to complete general education support courses for other certificate, diploma, or degree programs, and/or to meet personal and professional interests through specific courses.

Business and Hospitality Education

The Business and Hospitality Education Division provides technical postsecondary education for students of business programs, computer technologies, and hospitality education. Programs of study emphasize critical skill development for successful entry into the job market.

Continuing Education

Continuing Education provides vocational education opportunities for the unemployed, upgrading courses for those already employed, adult basic education for those seeking a higher educational level, and certain avocational courses for individual enrichment.

Engineering and Applied Technology

The Engineering and Applied Technology Division offers a variety of Associate in Applied Science degree programs in engineering technologies and diploma programs in applied technologies. Degree-level students are provided an appropriate blend of engineering, scientific, and mathematical theories with applications. Diploma-level students are provided training that is closely related to the industrial work environments. Appropriate related and general education courses are provided in support of these programs.

Learning Resources Center

The mission of the Learning Resources Center is to support the mission of the College and to enhance the teaching/learning process through provision of adequate, up-to-date resource collections in formats consistent with prevailing technologies; provision of access to the collections of other libraries; promotion of user-directed electronic database searching; provision of instruction in the use of resources to enable users to function in an information-driven society; and promotion of life-long learning opportunities.

Objectives

1. To assume an integral support role in fulfilling the mission of the College.
2. To provide library services designed to support and enrich College instructional programs.
3. To provide audiovisual services to the faculty, staff, and students of the College. These services will include production, materials, and equipment to support the instructional program and related activities. Telecommunications and satellite reception will be provided for seminars and conferences.
4. To provide a learning environment in which the students can be free to explore interests, with a learning pace and manner specifically tailored to individual needs.
5. To provide for the special academic needs of disabled students.
6. To support community needs for instructional and resource materials and sevices consistent with the mission of the college.

Nondiscrimination Policy

Asheville-Buncombe Technical Community College does not discriminate on the basis of sex, race, color, national origin, age, disability, or religion, in the educational programs or activities which it operates. The College is required by Title IX of the Education Amendment of 1972 not to discriminate on the basis of sex, and under other Federal legislation the College will not discriminate on the basis of race, color, national origin, age, disability, or religion. The requirement not to discriminate in education programs and activities extends to employment in the College and to admission into its programs. Inquiries or complaints concerning the application of Title IX, the ADA, and other Federal nondiscrimination legislation to Asheville-Buncombe Technical Community College should be referred to:

Director of Personnel
Asheville-Buncombe Technical Community College
340 Victoria Road
Asheville, North Carolina 28801
Azalea Building

Telephone: 828/254-1921, Ext. 113
TDD: 254-1921, Ext. 444 or depress space bar several times for operator assistance
Internet: www.asheville.cc.nc.us

Individuals with Disabilities

Individuals with disabilities (as defined in the Americans with Disabilities Act of 1990, "ADA") wishing to make a request for reasonable accommodation, auxiliary communication aids or services, materials in alternative accessible formats, or who wish to file a complaint of alleged discrimination on the basis of disability should contact the ADA Coordinator listed above.

Communicable Disease Policy

Asheville-Buncombe Technical Community College shall not discriminate against applicants, employees, students, or persons utilizing A-B Tech services who have or are suspected of having a communicable disease. As long as employees are able to perform satisfactorily the essential functions of the job, and there is no medical evidence indicating that the employee's condition is a threat to the health or safety of the individual, coworkers, students, or the public, an employee shall not be denied continued employment. Applicants

shall not be denied employment, nor shall students be denied admission to the campus or classes, nor shall persons utilizing A-B Tech services be denied services based on whether they are suspected of having a communicable disease so long as there is no threat to the health and safety of students, staff, or others involved. A-B Tech will consider the educational or employment status of individuals with a communicable disease or suspected of a communicable disease on an individual, case-by-case basis following any procedures outlined by the President.

Internet and Campus Network Acceptable Use Policy

Asheville-Buncombe Technical Community College provides campus network and computing facilities including Internet access for the use of faculty, staff, students, and other authorized individuals in support of the research, educational, and administrative purposes of the College.

The College has extensive information technology resources and systems available for both instruction and administrative applications. Faculty, staff, and students are encouraged to become familiar with College technology resources and systems and to use them on a regular basis. Users are expected to exercise responsible, ethical behavior when using these resources and to adhere to the following guidelines:

1. The Internet and associated resources contain a wide variety of material and information. Information available on the Internet is not generated or selected by Asheville-Buncombe Technical Community College. The College is not responsible for the accuracy or quality of the information obtained through or stored on the campus network.
2. The creation, display, or transmittal of illegal, malicious, or obscene material is prohibited.
3. Asheville-Buncombe Technical Community College will not be liable for the actions of anyone connecting to the Internet through College facilities. All users shall assume full liability (legal, financial, or otherwise) for their actions.
4. The user is responsible for complying with laws protecting software or other accessed information. Downloading programs and files may violate United States copyright laws that protect information and software. Although the Internet provides easy access to software distributed by companies on a trial basis, this does not mean that the software is free or that it may be distributed freely. All files downloaded from a source external to the campus must be scanned for viruses.
5. Because of the unsecure nature of transmitting files electronically, no right of privacy exists with regard to e-mail, Internet sessions, or electronic file storage and transmission. When sending or forwarding e-mail over the campus network or the Internet, users shall identify themselves clearly and accurately. Anonymous or pseudonymous posting is expressly forbidden.
6. Asheville-Buncombe Technical Community College computing and telephone facilities maintain usage statistics in archived log files for the purpose of monitoring system performance and usage patterns. Users must not perform tasks they would not want logged.
7. College employees may make reasonable personal use of the campus network, e-mail, and the Internet as long as the direct measurable cost to the public is none or is negligible, and there is no negative impact on employee's performance of duties.
8. All users of the Internet by way of College facilities must comply with all relevant policies and procedures of the College.
9. Use of the Internet for commercial gain or profit is not allowed from a College site.

Failure to comply with any of these provisions will result in disciplinary action as provided

for under the disciplinary policies and procedures of the College.

A-B Tech provides access to the Internet by way of the North Carolina Integrated Information Network. As such, all users are subject to the governing policies established by the North Carolina Information Resource Management Commission (IRMC) in addition to the above A-B Tech Internet and Campus Network Acceptable Use Policy. The current IRMC policy governing use of the North Carolina Integrated Information Network and the Internet can be reviewed on their Web site at www.sips.state.nc.us/IRMC/documents/approvals/irmcinet.html.

Summary of Performance Measures 2001 Report

The State Board of Community Colleges announced in 2001 that A-B Tech is one of five institutions in the North Carolina Community College System to earn a superior rating under new performance standards mandated by the General Assembly to measure how well colleges meet the needs of students and business and industry. The performance measures gauge the success of each of the state's 58 community colleges based on standards set by the State Board of Community Colleges. The board established 12 measures in all, five tied to performance funding and seven identified as accountability measures. Colleges must choose one of the seven as an additional performance funding measure. Colleges meeting the standards are eligible to receive "performance compensation" based on how many of the six measures they meet. Those who meet at least five of the six earn a superior rating and are eligible to receive additional funds.

Performance Measure	Standard Met
1. Progress of basic skills students	YES
2. Passing rates for licensure and certification examinations	YES
3. Goal completion of program completers and non-completers	YES
4. Employment status of graduates	YES
5. Performance of college transfer students	YES
6. Passing rates of students in developmental courses	YES
7. Success rate of developmental students in subsequent college-level courses	N/A
8. Student satisfaction of program completers and non-completers	YES
9. Curriculum student retention and graduation	YES
10. Employer satisfaction	N/A
11. Business/industry satisfaction with services provided	YES
12. Program enrollment	YES

Continuing Education



Continuing Education

The Continuing Education Division offers classes and training to support the economic development of the community and its citizens. Needs for higher academic education, employment skills, basic educational skills, job training and retraining, personal growth and development, and community and economic development are continually identified through a variety of assessments.

Different learning approaches to meet community needs involve traditional classroom instruction, individualized instruction, computer-assisted learning, community-based learning centers, on-site classes and training for business and industry, and apprenticeships. Also available is assessment, consultation, and technical assistance for individuals, businesses, industries, and public and private sector agencies.

The educational offerings of the Continuing Education Division are built on the concept of lifelong learning. Classes and training are provided in different formats, at a variety of times, and at locations where the needs of students can most conveniently be met.

Some of the Continuing and Off-Campus Education programs are coordinated with the Job Training Partnership Act (JTPA) or the WorkFirst programs of other agencies. These and other similar programs represent joint efforts to bring education and training services to the community.

Training and course work may carry Continuing Education Unit (CEU) credit; these unit credits are not a part of college curriculum diploma or degree programs. Curriculum courses that carry full college diploma and degree credits are offered at off-campus sites through the coordinated efforts of Continuing Education Program directors and the deans and department chairs of the four curriculum academic divisions of the College.

The Continuing Education Division provides programs for adults age 18 or older. Minors may enroll for some classes with special permission. For some programs, the enrollment of minors cannot displace an adult.

Costs

Costs for Continuing Education classes vary, but there is usually a nominal registration fee. Fees may also be charged for books, materials, and supplies. For some classes, North Carolina residents age 65 or older are exempted from registration fees. There are no registration fees for basic skills classes.

Course Repetition

There is a limit on the number of times a student may enroll in a particular continuing education class. The Continuing Education Course Repetition policy guides enrollment in selected types of classes.

Occupational extension courses may not be taken more than twice within a five-year period without the student paying the full cost of the course as determined by the College. Students may repeat occupational extension courses more than once if the repetitions are required for certification, licensure, or recertification.

A course other than occupational extension may not be taken for more than two consecutive terms without a break of at least one term. Students who are enrolled in Adult Basic Education (ABE), General Education Development (GED), or Compensatory Education classes may continue in them as long as reasonable educational and/or social progress is being made according to the goals of the program. Students in Compensatory Education classes will be reviewed after no more than two years to determine whether they will continue in the program.

The College reserves the right to modify this policy in general or relative to a given course as necessary to meet the needs of the College and its students.

Services

Continuing Education needs are addressed in two domains: (1) Business and Industry Services and (2) Community Education Services.

Business and Industry Services

The **Center for Business and Industry** provides programs and services to address the training and development needs that impact the local and regional economy. The Center ties the College to the associated efforts of local, regional, and state agencies for economic development.

Focused Industrial Training (FIT) is designed to address the special training needs of existing North Carolina industry. Serving primarily the manufacturing population, FIT uses individual needs assessment and consultations to target and upgrade workers' skills needed to keep up with new work methods and technology. FIT job training can be designed for skilled and semiskilled workers, lead supervisors, and team leaders. The targeted occupations are material handlers, assembly technicians, welders, machinists, maintenance mechanics, metal workers, production line workers, and woodworking machine operators. Technical assistance, which covers any subject taught at A-B Tech, is also available to manufacturing companies through FIT.

New and Expanding Industry needs are met through customized training programs designed especially for prospective employees and funded at no cost to the employer. For some new industries, the Maple Building Skills Center is available for on-campus training.

Occupational Programs provide education and training for individuals to prepare for new or different employment and to upgrade the skills of individuals in their current employment. These opportunities are available through single courses or a series of courses specifically designed for an occupation. A significant number of these courses are offered to meet licensure or certification requirements for employment in careers such as Fire and Fire Rescue, Emergency Services, Criminal Justice/Law Enforcement, Certified Nursing Assistant (CNA), Insurance, Real Estate, and Dental Radiography. Other offerings include programs for the following occupational areas: hospitality, medical, computer applications, business management, public education, electrical, construction, and inspection.

Students in the **Decorative Painting Techniques & Restoration Program** train in all aspects of surface treatments and decoration. The content of the program deals with traditional finishes in historic buildings as well as new work and the development of individual styles and techniques. Students learn the physical and chemical nature of building materials, methods of stenciling, gilding, ornamental plaster work, marbling, woodgraining, wall glazing, paperhanging and the preparation of old and new surfaces to receive decorative treatments. Qualifying graduates will receive the "City and Guilds of London" certificate for Decorative Painting and Restoration. Related job opportunities include residential and commercial decorating, church restoration, picture frame and architectural gilding. There are also opportunities for international travel. This 44 week program starts in January and ends in December. The foundation level covers tools and equipment, materials, drawings and geometric shapes, calculations, and surface preparation. The advanced level covers specifications, site organization, decorative treatments, and color.

The **Small Business Center** provides consulting and advising services to present and potential small business owners. Additionally, through very practical, short-term seminars, the Center addresses the continuing needs of small business clients for updating information, refining entrepreneurial skills, and enhancing techniques to improve the profit advantage in risk taking. The seminars frequently address the critical areas of capital formation and prevention of business failures. The Small Business Center works cooperatively with local chambers of commerce, the Active Corps of Executives (ACE), the Service Corps of Retired Executives (SCORE), the Center for Improving Mountain Living's small business counseling services, and the U.S. Small Business Administration.

The **Quality Program** provides training and technical assistance in total quality practices and ISO 9000 for businesses, industries, and public and private sector agencies. Programs include process improvement, team building, quality skills, statistical process control, facilitator development, self-assessments, and all phases of ISO 9000 implementation. The program also partners with the American Society for Quality Control and the North Carolina Quality Leadership Foundation to provide quality course offerings. Additionally, a resource center for quality information and a lending library make specialized books and videos available.

Community Education Services

Educational opportunities are provided directly to the citizens of the community through the programs of Community Education Services.

The **Basic Skills Programs** provide opportunities for upgrading reading, mathematics, English, and life skills. Assessment is a basic part of all of these programs. The **Adult Basic Education (ABE) Program** supports academic remediation in reading comprehension, mathematics, and language skills and provides pre-GED instruction.

One of two adult high school programs can lead the student to the equivalent of high school completion: (1) The **General Education Development (GED) Program** offers instruction in five subject areas in preparation for taking the high school diploma equivalency (GED) test and (2) The **Adult High School Diploma Program** provides instruction designed to qualify individuals for an adult high school diploma, awarded jointly by a local board of education and the College after the student successfully completes 20 units of credit and the North Carolina Competency Tests. Instruction for Basic Skills Programs is available on campus and at community learning centers or workplace sites when there is sufficient demand.

At the **GED Testing Center**, students can take the tests of General Educational Development (GED). The tests cover:

- Writing Skills
- Mathematics
- Social Studies
- Science
- Interpreting Literature and the Arts

With passing scores, the student earns a high school diploma equivalency (GED) which is awarded by the North Carolina Community College System. This certificate is generally accepted on an equal basis with a traditional diploma for employment, promotion, or further education. To be eligible for testing, an applicant must:

- be at least 18 years old (16- and 17-year-olds may test with special permission).
- be a current North Carolina resident
- be certified to test through the GED Preparation Program (254-1921, Ext. GED).
- pay the testing fees ($7.50 for initial testing and $2.50 for retesting in Writing Skills) at the Business Office in the Simpson Administration Building before arriving at the testing center.

English as a Second Language (ESL) is intended to improve the English reading, speaking, and writing skills of nonnative students. American culture, history, and life skills are also taught.

The **Compensatory Education Program** is an academic program specifically for adults with mental retardation. The program features lessons in community living, consumer education, health, language, mathematics, social science, and vocational education. Emphasis is placed on helping each student become as independent as possible, primarily by improving academic, social, survival, and independent-living skills. **Traumatic Brain Injury (TBI)** classes are provided to improve and enhance the skills of adult survivors of traumatic brain injuries. Classes focus on memory, social, and time-management skills as well as community living, consumer education, health, language, and math.

The **Community Services Program** provides courses, seminars, and activities that contribute to the community's overall cultural, civic, and intellectual growth and assists adults in the development of new skills or the upgrading of existing vocational, academic, and practical skills. Among the avocational component courses are calligraphy, personal photography, pottery, and art. The academic component includes courses such as languages, art appreciation, consumer economics, investments, and retirement planning. Catering, practical horticulture, woodworking, chair caning, upholstery, and small engine repair are typical class offerings in the practical skills component of the program.

The **Human Resources Development (HRD) Program** provides short-term prevocational training and counseling designed to help unemployed and underemployed adults successfully enter the work force and additional education. Instruction focuses on the following topics:

- Goal setting
- Academic preparation
- Self-esteem and confidence
- Job seeking and job-keeping skills
- Vocational assessment and career exploration
- Teamwork and workplace interpersonal skills
- Problem-solving, critical thinking, and communication skills

Admissions & Student Support Services



General Admission Requirements and Procedures

Asheville-Buncombe Technical Community College has an OPEN DOOR admission policy. High school graduation or equivalence is normally required for admission to any curriculum; however, there are a few programs for non-graduates 18 years of age or older. The College accepts applications continuously throughout the school year. Early application is advised for many programs.

Individually selected classes may be taken by Unclassified Students providing the prerequisites have been met. After accumulating 20 hours, Unclassified Students must see a counselor/advisor in Student Services in order to confirm further educational plans.

Placement into a specific course of study is based upon standards that will help to assure the applicant's success in that course of study. Those who do not yet possess the background required by the course of study of their choice may be enrolled in developmental courses designed to provide this background.

Persons wishing to enroll in a curriculum program at the College must complete the entire application process and meet the following requirements:

1. Submit an application form.
2. Obtain transcripts of credits from all secondary and post-secondary schools attended. Records should show that the student is a high school graduate or has a state approved equivalent education.
3. Complete the battery of placement tests administered by the College. In the case of the six competitive allied health programs, the placement tests are used to earn admission through a point system. Provisional or unconditional admission to individual programs will be determined by scores on the tests. (See programs for details.) Requests for reasonable accommodations or test exemption by transfer credit will be reviewed individually. Alternate testing formats will be made available to individuals with disabilities upon request to the Coordinator of Special Needs.
4. A complete physical examination may be required by some programs, but only after the student is admitted.

Upon completion of this procedure, the student will be accepted unconditionally or provisionally into the program. Provisional acceptance indicates that developmental classes are necessary; this status changes to unconditional acceptance once the developmental classes are completed.

Competitive Allied Health Programs

Admission to eight of the Allied Health curricula is competitive among qualified applicants according to established criteria and has a limited application period. Competitive Allied Health programs include Associate Degree Nursing, Dental Assisting, Dental Hygiene, Health Information Technology*, Medical Sonography, Practical Nursing, Radiography, and Surgical Technology*. Applicants are selected for admission to these programs based upon a point system. Criteria include test scores, courses taken, employment and volunteer experience in the Allied Health field, and high school class rank. Selection criteria vary for each program. The exact admissions evaluation criteria for each competitive Allied Health program can be found in the Admissions section of the college web page at www.asheville.cc.nc.us. The printed version is available in the Admissions Office or the Counseling Center. The criteria are reviewed, updated, and approved annually.

*Pending NCCCS State Board Approval

Placement Testing

The purpose of placement testing is to match the academic readiness of the incoming student with the academic requirements of the curriculum. Persons applying for admission into all degree and diploma programs are required to take the Computerized Placement Test (CPT). Students who are unclassified (not desiring to be enrolled in a major) will need to take the placement test if they desire to take a mathematics, English, or reading class. Alternate testing formats will be made available to individuals with disabilities upon request to the Coordinator of Special Needs. Documentation of disability will be required prior to the establishment of accommodations for placement testing.

All students, except those applying to limited enrollment programs in the Allied Health division, may waive the placement testing requirement if they submit documentation of acceptable SAT or ACT scores which have been earned within the preceding three years. To be enrolled directly into the first-level curriculum English and math courses, students would need to have a score of 500 on both the verbal and mathematics portions of the SAT or 21 on ACT English, 18 on ACT Reading, and 20 on ACT Math. Transfer credit received from a regionally accredited institution for first-level English and math courses will also be accepted in lieu of placement testing. The student must submit an official transcript to receive transfer credit and to officially waive the need for placement testing. Students applying for admission to limited enrollment Allied Health programs should consult the program's admissions brochure for detailed information about placement testing for the program of choice. These publications are available in the Admissions and Counseling offices.

All students, upon submitting a College application, will receive a copy of the college's "Placement Testing" brochure as well as a list of testing dates and times. The brochure provides information on each of the placement testing sections as well as a sample test. Students must present a picture I.D. to take the placement test. Placement testing is available both day and evening hours and the results are provided to the student by a counselor or academic advisor immediately after the student completes the tests. Based on placement scores, a student will be placed directly into College English and math or into one of the transitional courses that are designed to prepare the student for entry into his or her chosen field of study.

Counseling Services and the Career Center

A-B Tech provides free, confidential counseling and related services for students through the Counseling Center located in the Azalea building. Students are encouraged to use counseling services at any time if they have personal, academic, or career concerns. The professional counseling staff, after initial assessment, will refer students who need specialized or long-term services to appropriate resources within the community.

Career counseling and career exploration services are available to students who are undecided or confused about career plans. The Career Center, located in the Azalea building, houses a variety of career resources, both print and computerized, to assist students in career-related areas. Individual career testing and career counseling sessions are available by appointment.

Services to Students with Disabilities

Asheville-Buncombe Technical Community College is invested in full compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. The Special Needs Office at the College ensures that the programs and facilities of the College are accessible to all students. The College focuses on the student as an individual and works toward equal opportunity, full integration into the campus environment, physical accessibility and the provision of reasonable accommodations, auxiliary aids and services to students.

If you are a student with a disability and require the services of interpreters, readers, notetakers, or need other reasonable accommodations, it is your responsibility to request these services from the Special Needs Office since Federal law prohibits the College from making pre-admission inquiries about disabilities. This office is located in the Counseling Center in the Azalea Building. In order to assess each disabled student's needs and to provide the necessary support services,

professional documentation of a disability or disabilities must be furnished to the Special Needs Office. Documentation must be current. Information provided by students is voluntary and appropriate confidentiality is maintained.

Students who need assistance for academic services should call the Coordinator of Special Needs at 828/254-1921, Ext. 141. Services are designed and developed on an individual-needs basis, and students may elect to use any or all of the services appropriate to their needs at no charge.

The College has a telecommunications device for the deaf (TDD/TTY). Calls are received at the College switchboard, and the spacebar should be pressed several times to signal a TDD/TTY call. Please remain on the line while your call is being transferred to the Special Needs Office. Our purpose is to facilitate your involvement in the life of our College and all of the benefits it provides.

An appointment with the Coordinator of Special Needs is recommended in order to discuss any special concerns. If you are not satisfied with the decisions of this office, you may utilize the College's Student Appeals Policy.

International Applicants

Proficiency in the English language and satisfactory academic records are important factors in the admission decision for all applicants from outside the United States. International students must have graduated from a secondary school that is equivalent to secondary schools in the United States. A transcript of secondary school work must be sent to the Admissions Office. The transcript must be translated into English.

To demonstrate proficiency in the English language, international applicants from non-English speaking countries must take the Test of English as a Foreign Language (TOEFL). The applicant must score at least a 213 on the computer-based test or a 550 on the paper-based test. If the applicant is already in the Asheville area or near another North Carolina community College that offers the Computerized Placement Test (CPT), minimum scores of 51.1 on the reading part and 52.1 on the sentence skills part of the CPT may be substituted for the TOEFL requirement. All international applicants must take the CPT prior to registering for classes.

International applicants must also certify their ability to pay for transportation, living expenses, out-of-state tuition, fees and other school expenses while in the United States.

The A-B Tech application, high school transcript, TOEFL scores, and evidence of financial resources must be received before an admission decision can be made and a U.S. Immigration and Naturalization Service I-20 form issued to the student for application for an F-1 student visa.

International applicants should contact the Director of Enrollment Management for further information about admission. E-mail inquiries should be addressed to: admissions@asheville.cc.nc.us.

Academic Advising

In order to ensure that every student receives quality academic advising, A-B Tech has established an academic advising system. Students who are admitted to a curriculum are advised by a faculty member from that curriculum. Unclassified students are advised by the counselors/advisors in Student Services. Counselors/advisors initially determine the provisional courses for students based upon the results of placement testing. Faculty advisors determine the major area courses to be taken by provisional students. In all instances, a student's registration form must be signed by an appropriate advisor indicating that the schedule meets appropriate academic standards. No student will be allowed to register without an advisor's signature. Students who desire to register for more than 20 credit hours in a semester will need the approval of their department chair.

Provisional Student Status

Provisional status accommodates those students who can benefit from the academic programs offered by the College but require additional developmental course work to be successful in their chosen program. Any student seeking a diploma, degree, or certificate in a noncompetitive program of study may be eligible for provisional student status.

The determination of provisional status shall be dependent upon the results of testing and the

professional judgment of the Student Services counselor/advisor. The counselor/advisor will assist the student in developing a Plan of Individual Education (PIE) tailored to meet the student's academic needs. The PIE will document the developmental course work required of the student and any additional courses determined by the counselor/advisor. A copy of the PIE will be filed in the student's permanent record as well as with the academic advisor.

Provisional students are generally permitted to register concurrently for developmental courses and required courses in their program of study as long as they meet the prerequisites; however, it is recommended that the course schedule for any academic term not exceed 15 credit hours. Developmental courses must be taken beginning with the student's first semester of enrollment and all such course work must be completed as outlined by the student's academic advisor.

For more information about provisional student status, students are encouraged to contact Student Services.

Adult Basic Skills Student Status

Students who place into Adult Basic Skills reading will be allowed to enroll in College courses only after they have received appropriate remediation through the Adult Basic Skills program. Students who test into Adult Basic Skills language **and** mathematics must also receive appropriate remediation prior to enrolling in College courses.

Students who place into Adult Basic Skills level math only or Adult Basic Skills language only will be allowed to take Developmental Studies and/or curriculum classes with approval of their academic advisor.

Transfer Credit (Transcript Evaluation)

Credit from Other Institutions. Asheville-Buncombe Technical Community College will accept credit for parallel work completed in other post-secondary institutions accredited by a regional accrediting agency. Applicants who seek transfer credit should make regular application to the College and obtain from the Admissions Office a *Request for Transfer Credit* form for the evaluation of all post-secondary work. Transcripts will not be evaluated until this form has been completed. No credit will be granted for work below a "C." Transfer credit for developmental courses will only be granted if the course is a semester course taken at another college in the North Carolina Community College System. Transfer credit will be awarded for course work without assigning grades or quality points. Proficiency credits from other institutions will not be accepted. No more than one-half of the credit hours required in a program may be earned by transfer credit. If any course is taken for credit after transfer credit has been awarded, and a grade of A, B, C, D, or F is earned, it will replace the transfer credit. A student who must repeat a course may take it at another institution and transfer it to A-B Tech according to the guidelines above. Transfer credit may be awarded for appropriate military courses. If a student submits a transcript from a foreign university, it will be the *student's* responsibility to provide accurate translations of (a) the transcript, (b) course descriptions, and (c) the grading system. Credits will be evaluated in the context of the current catalog.

Students transferring into the Associate in Arts or Associate in Science program who have transfer credit from colleges other than the North Carolina Community College System (NCCCS) will not be eligible for the Articulation Agreement between the universities and NCCCS. Students who have quarter courses will also not be eligible for the Articulation Agreement. Transcripts of these students will be evaluated on a course-by-course basis.

Students transferring into the AA or AS program who have completed the general education core of 44 semester hours with the proper distribution of hours, a "C" or better in all courses, and an overall GPA of 2.0 will be given credit for the general education core.

Declaring or Changing Majors. To declare or change a major, the student must meet with a counselor/advisor in Student Services.

Academic Fresh Start. Any returning student who has not attended A-B Tech for three years and upon reenrolling maintains a 2.00 GPA for a minimum of 12 semester hours may petition to have grades on all prior course work more than three years old with a grade less than a "C" excluded in calculating the cumulative GPA. Grades below "C" disregarded in calculating the GPA will not count toward graduation but will remain on the transcript. The student should complete

an application for Academic Fresh Start (obtained in the Student Records and Registration Office), after the end of the semester in which he/she has completed the 12 semester hours required. A student who plans to transfer to another College should contact that institution to determine the impact of Academic Fresh Start on transfer.

Transfer of Credit to Other Institutions. Asheville-Buncombe Technical Community College facilitates the transfer of credit to other institutions. The Associate in Arts and Associate in Science programs are designed to transfer to senior institutions at or near the junior level. Associate in Applied Science graduates have the option of entering a career, continuing their education at a senior institution, or doing both. We are proud of the fact that our graduates have a marketable job skill after two years of study and can also complete a four-year degree after two more years of academic work.

Students who attend most senior institutions do not declare a major until their junior year. Our applied science programs are such that those students who earn a baccalaureate degree pursue it in an inverted pattern. The majority of the student's academic major is earned at A-B Tech in the first two years of study. As junior level students at the senior institution, they take general university requirements and may take more advanced courses relating to their major.

Parallel work, including single courses, completed at A-B Tech will transfer to other institutions in the North Carolina Community College System and to most senior institutions in the state. Most public and private four-year institutions in North Carolina, and many that are out of state, regularly accept credits from A-B Tech and generally enroll the graduates at approximately the junior level. The details of these affiliations are available from the transfer advisor in Student Services and the individual senior institutions.

A-B Tech strongly encourages its graduates to continue their formal education after completion of their A-B Tech programs. It is important that graduates recognize the need to continue their education throughout life to prepare for new and changing careers.

Credit by Examination (Proficiency Examination)

Students who can provide tangible evidence of preparation to challenge a course, such as a transcript of similar College level credits, record of military study, certification or license, standardized test scores, or written statements from employers regarding training or directly related work experience indicating that they may be proficient in a subject, may request credit by examination. A written request must be made to the proper Department Chairperson on a form obtained from the Student Records and Registration Office. This test must be administered *immediately after* the 10 percent point in the semester.

Examinations are comprehensive and must be approved by the supervisor of the instructor administering the exam. The examination may be oral, performance, written, or a combination of these methods. To receive credit by examination, the score must be above average ("A" or "B"). The decision of the examining instructor is final. No quality points are awarded for credit by examination.

No student may request a second test for Credit by Examination in the same course or request Credit by Examination in a course after receiving any recorded grade for that course. Exceptions must have approval of the Vice President for Instruction.

Because of specific requirements, credit for certain courses may not be received through Credit by Examination. The courses which may not be challenged by examination are marked with an asterisk in the course description section of the catalog. Most institutions will not accept proficiency credits for transfer.

Students who request Credit by Examination must:

1. Enroll as a credit student in the course to be challenged and pay tuition if enrolled on part-time basis. There is no extra charge for full-time students who are taking at least 16 credit hours.
2. Present evidence of proficiency, complete the written request form, and have the request approved *prior to* the 10 percent point of the semester.
3. Remain enrolled and attend class until the examination is administered. During this period, students who have written approval for the exam may attend class without

purchasing textbooks and materials. If books are purchased and returned for refund, they must be in new condition.

4. Students who are very confident of passing the exam may choose to begin with a course overload.
5. Students who perform on the exam at a level sufficient to get credit may leave the course and have an indication of Proficiency Credit by Examination (P) posted to their record for the course. Receiving proficiency credit does not entitle the student to a tuition refund.
6. Students who do not receive credit by examination are encouraged to purchase textbooks and materials and remain in the class to earn credit at the end of the semester.
7. Students who receive financial assistance of any type are required to inform the director of their assistance program that they are seeking proficiency credit. Assistance may be reduced and reimbursement will be required if the course load is reduced by receiving credit by examination. Students may choose to overload in this case.

Any exceptions to these procedures must have prior written approval by the Vice President for Instruction and the appropriate Division Dean and Department Chairperson.

Articulated and Advanced Placement Credit

High School Articulation and RAVE. College credit may be awarded for high school courses if conditions of the North Carolina High School to Community College Articulation Agreement or Regional Articulation in Vocational Education (RAVE) are met.

AP and CLEP. College credit may be awarded if appropriate conditions are met by Advanced Placement (AP) courses or College Level Examination Program (CLEP) test scores. A-B Tech academic credit will be granted to enrolled students who receive scores of 3, 4, or 5 on the AP tests offered by the College Board. AP credit accepted at other post-secondary institutions is not automatically transferred to A-B Tech, but is reviewed when scores are received.

A-B Tech credit may be granted to students who have satisfactorily passed certain CLEP tests. Credit may be considered only for those courses which have been approved by the various divisions and/or programs of the College. A maximum of six semester credit hours may be granted for each CLEP subject examination. A-B Tech will accept a total of 12 semester credit hours earned through CLEP tests. See the Admissions Office in the Azalea Building for details.

Auditing Courses

Students wishing to audit courses must register through regular registration procedures and pay standard tuition and fees. Students who register to take a course for credit and then choose to audit the course must complete a "Request for an Audit Grade" form in the Student Records and Registration Office within the first 15 days of the term. The instructor must sign the form to approve the change. A student may change from audit to credit status through the Student Records and Registration Office only during the first five days of the term. Audit work does not receive credit and cannot be used toward diploma or degree requirements. All prerequisites must be met before a course can be audited. Physical Education classes may not be audited. Audit work is not covered by financial assistance.

Balancing Class Size

Each student is assigned a sequential number for each curriculum class by the computer as registration is completed. This number determines position in the class should the class need to be split. The position determines the priority of the student to remain in the class. The College reserves the right to split classes and assign students to alternate sections whenever necessary to balance class size.

Course Substitutions

Course substitutions must be approved by the program area dean. The course grade will be the grade earned in the substitute course(s). Exceptions must be approved by the Vice President of Instructional Services.

Curriculum Course Repetition

Students who need a course to graduate may take the course as many times as necessary to pass it, providing space is available. Any course that has been passed or audited may not be taken for credit or audited more than twice per academic year subject to space being available after registration. The twice-per-year regulation also applies to single or elective courses that are not required for graduation. Physical education courses may not be audited. No single physical education course may be attempted more than twice. Concurrently enrolled high school students in Huskins Bill or dual-enrollment programs may not attempt a course more than two times while concurrently enrolled.

Independent Study

Selected courses may be available for Independent Study at the discretion of the faculty with Department Chair approval. The completed "Request for Independent Study" form must be presented to the Students Records and Registration Office when the student registers.

Tuition and Expenses

North Carolina Residency

In order to qualify for the resident tuition rate, North Carolina law (G.S. 116-143.1) requires that a legal resident must have maintained domicile in North Carolina for at least the 12 months immediately prior to classification as a resident for tuition purposes. The student cannot qualify for in-state tuition if he or she is claimed as a dependent by a parent or guardian who is not a N.C. resident.

One must also have accomplished many of the things normally done by one who intends to reside in a state permanently. Examples of these actions are being employed, paying taxes, having a current North Carolina driver's license, voting in the state, belonging to churches, clubs or other organizations. Anyone having a question regarding resident status should contact the Director of Enrollment Management.

Tuition*

Fall and Spring Semester:

N.C. residents per semester	$496.00
Nonresident of N.C. (16 or more credit hours)	$2,772.00
Part-time N.C. residents per credit hour per semester	$31.00
Nonresident of N.C. per credit hour per semester (fewer than 16 credit hours)	$173.25
Return Check Charge	$15.00

Summer Semester:

N.C. residents per semester	$279.00
Nonresident of N.C. (9 or more credit hours)	$1,559.25
Part-time N.C. residents per credit hour per semester	$31.00
Nonresident of N.C. per credit hour per semester (fewer than 9 credit hours)	$173.25
Return Check Charge	$15.00

North Carolina residents 65 years of age and older are exempted from the payment of curriculum tuition and registration fees for some Continuing Education classes.
*Tuition is subject to change.

Student Activity Fees

The student activity fee will be charged each semester based upon the number of credit hours taken during the day at the Asheville campus. The student who enrolls for nine or more day, on-

campus credit hours will be charged a student activity fee of $12.00 for fall and spring semesters and $10.00 for summer semester. The student who enrolls for eight or fewer day, on-campus credit hours will be charged a student activity fee of $9.00 for fall and spring semesters and $6.00 for summer semester.

Student Insurance

Certain risks are inherent in any work involving regular contact with mechanical and electrical equipment. While stringent precautions will be taken to ensure safety, it is felt to be in the interest of all students to provide some measure of insurance protection.

A group policy, providing the desired insurance protection, will be maintained in effect by the College and all curriculum students will be REQUIRED to subscribe to such coverage. The only exception would be students taking **only** off-campus courses. The cost of accident insurance to the student will be approximately $2.00 per semester.

The Hope Scholarship

The Hope Scholarship is actually a federal tax credit, not a scholarship. A family may claim up to $1,500 per year for each eligible dependent, for up to two years. One hundred percent of the first $1,000 of eligible expenses, and 50% of the next $1,000 may be claimed for an annual maximum of $1,500. The actual amount of the credit depends upon family income and the amount of qualified tuition paid less any financial aid.

To qualify, the taxpayer must file a return, owe taxes, and claim the student as a dependent (unless the student is a spouse). The student must be enrolled at least half-time in an eligible program leading to a degree or certificate and must not have completed the first two years of undergraduate study. The credit is not available to students who have been convicted of a felony drug offense.

The Lifetime Learning Tax Credit

The Lifetime Learning Tax Credit may be claimed up to $1,000 per year for the taxpayer, spouse, or eligible dependents for an unlimited number of years. This credit is family-based rather than dependent-based like the Hope Credit. The taxpayer may claim up to 20% of $5,000 of eligible expenses. The actual amount of the credit depends upon the family's income and the amount of qualified tuition less any financial aid. Unlike the Hope Credit, students are not required to be enrolled at least half-time in one of the first two years of post-secondary education.

This is provided for informational purposes only. For detailed tax information, please consult your tax advisor. Information is also available at www.ed.gov/inits/hope/.

Tuition Refund Policy

A 100% refund shall be made if the student officially drops prior to the first day of classes of the term as noted in the College Calendar. Also, a student is eligible for a 100% refund if the class in which the student is registered is canceled.

A 75% refund shall be made if the student officially drops from the class(es) prior to or on the official 10% point of the term. Insurance and student activity fees are NOT refundable. Federal regulations, if different from above, will overrule this policy.

Tuition Refund Procedure

To be eligible for a tuition refund the student must:

1. Register and pay tuition and fees.
2. Process a "Drop/Add Registration Change Notice" form in the Student Records and Registration Office on or before the 10% point of the term as defined above.

Additional Costs

Beginning students should be prepared to incur additional estimated expenses during the academic year (two semesters and summer term) as follows:

Allied Health and Public Service Education

Books	$500-600
Supplies	$200-500

Business and Hospitality Education

Books	$500-600
Supplies	$100-500

College Transfer

Books	$500-600
Supplies	$100-200

Engineering and Applied Technology

Books	$500-600
Supplies	$150-1000

The cost of books and supplies varies from year-to-year by curriculum due to price changes, curriculum changes, and instructor preferences. For purposes of definition, the following items may be classified as supplies: pen, pencils, paper, notebooks, instruments, uniforms and shoes, rental of uniforms, safety equipment, hand tools, calculators, lab coats, membership dues, pins and caps. Students will incur most of the supply costs for their curriculum during the first semester of study. Students are encouraged to consult with their department chairperson for actual costs of supplies for their curriculum. Students should consult with their department chairperson or a member of the Math Department prior to the purchase of a calculator for use in class.

Parking Regulations

All students are required to register their vehicles and display parking permits. Copies of parking regulations are available in the Business Office. Parking spaces designated for individuals with disabilities are located at each facility. Spaces marked by yellow lines are for faculty and staff use only. All parking fines must be paid prior to registering for classes.

Financial Aid

The purpose of the financial aid program at Asheville-Buncombe Technical Community College is to provide assistance to students who, without such aid, would be unable to attend the College. The program is committed to the philosophy that no eligible student should be denied access to a higher education because of a lack of financial resources.

An application for financial aid will gain consideration for grants-in-aid, loans, scholarships and student employment opportunities. In general, financial aid is awarded to students on the basis of need, academic potential, and future promise. In determining the student's need, it is assumed the student will help himself through summer jobs and part-time work while attending school, that the family will provide aid commensurate with its income and resources and that the student will avail himself of any other financial assistance which is available.

Students desiring financial aid for an academic year (August through May) are encouraged to apply early (January through March) to be given priority consideration for the funds available. Applications will be processed until all available funds are awarded.

Copies of all applications mentioned in the following procedure may be obtained from any high school guidance office, most College and university financial aid offices, or the A-B Tech Financial Aid Office. Alternative accessible application formats will be made available to individuals with disabilities upon request to the ADA Coordinator.

Application Procedure

All applicants desiring priority consideration for available financial aid funds must complete the following steps:

1. Before applying for financial aid it is advisable that each applicant complete the first three steps of the Admission Procedure. (See Table of Contents for the General Admission Requirements and Procedures page reference.)

2. The applicant must complete and mail a Free Application for Federal Student Aid (FAFSA) to the Federal Student Aid Program in the envelope which accompanies the application. (Important Note: Applicants may use the electronic version of the FAFSA—FAFSA on the Web—to apply for assistance. For more information about the electronic application, the applicant may call FAFSA customer service at 1-800-801-0576. Electronic applications are processed faster than paper applications. Applicants may use the College computers in the Holly Learning Resources Building computer lab and in the Financial Aid Office in the Azalea Building to access FAFSA on the Web and to file their application electronically.)
3. When completing the application, the applicant must list the appropriate federal school code number on the application. A-B Tech's code number is 004033.

The applicant will receive a Student Aid Report (SAR) from the processor approximately three to four weeks after mailing the application. Once the SAR is received the applicant must contact the Financial Aid Office to assure that the office has received the SAR data electronically and to receive further instructions regarding the application process.

Once the application process has been completed, the applicant's eligibility for assistance will be determined. Official notification of awards is made no earlier than May 15 prior to fall semester enrollment. Each award is contingent upon the availability of funds.

Students desiring additional information about the Financial Aid Program at A-B Tech are urged to write or phone: Director of Financial Aid, Asheville-Buncombe Technical Community College, 340 Victoria Road, Asheville, NC 28801, (828) 254-1921, Ext. 162.

Satisfactory Academic Progress Standards for Financial Aid

Introduction. The Higher Education Act of 1965, as amended by Congress in 1980, mandates institutions of higher education to establish minimum standards of "satisfactory progress" for students receiving financial aid. The federal regulations addressing satisfactory progress were initially published in October 1983, with amendments made in December 1987 and then again in April 1994.

Satisfactory Progress Defined. Generally, a student is considered to be making satisfactory progress toward his/her curriculum program of study when three requirements are satisfied:

1. Maintain a minimum cumulative grade point average based on credit hours attempted. (The qualitative standard required by regulation).
2. Complete a minimum number of credit hours of the total credit hours attempted with grades of A, B, C, or D. (The first quantitative standard required by regulation).
3. Successfully complete the program of study within its maximum time frame. Regulations specify that the maximum time frame may not exceed 150% of the published length of the program for full-time students. (The second quantitative standard required by regulation).

Monitoring Satisfactory Progress. The College will monitor the qualitative and quantitative standards referenced in 1 and 2 above using the chart below. The chart has been designed to accommodate all federally eligible programs of study offered by the College, and variable enrollment status of students (e.g. full-time, half-time, less than half-time).

Credit Hours Attempted*	Minimum Credit Hours To Be Completed**	Minimum Cumulative GPA Required***
1 -10	1	0.50
11-20	4	0.50
21-30	10	0.75
31-40	16	1.00
41-45	23	1.25
46-50	30	1.50
51-55	36	1.75
56-60	40	2.00
61-65	43	2.00
66-70	47	2.00

71-75	50	2.00
76-80	53	2.00
81-85	57	2.00
86-90	60	2.00
91-95	63	2.00
96-100	67	2.00
101-105	70	2.00
106-110	73	2.00
111-114	76	2.00

*Credit hours attempted will be cumulative and will include all hours for which the student was enrolled as of the census date of each academic term or for which the student received a grade. The census date is defined as the last day for registration as outlined in the College Catalog.

**Credit hours completed with grades of A, B, C, or D only will fulfill this requirement. Grades of AP, AR, CR, I, NS, P, T, TH, U, W, X, and Y, will not fulfill this requirement.

***Cumulative GPA is computed by dividing the total number of quality points earned by the total credit hours attempted for which the student received grades of A, B, C, D, F, or U.

The second quantitative standard referred to as the maximum time frame will be measured independent of the monitoring chart. For each program of study a maximum time frame will be calculated by taking the total credit hours required for the program as outlined in the College Catalog and multiplying the total by 150%. Time frames will vary from program to program. Examples:

1. Practical Nursing curriculum requires 47 credit hours to complete the diploma. The time frame is calculated (47 x 150% = 71).
2. Associate Degree Nursing requires 75 credit hours to complete the degree. The time frame is calculated (75 x 150% = 113).
3. Associate in Arts (A.A.) degree and Associate in Science Degree (A.S.) require 65 credit hours to complete the degree. The time frame is calculated (65 x 150% = 98).
4. Carpentry requires 46 credit hours to complete the diploma. The time frame is calculated (46 x 150% = 69).

The maximum time frame establishes the maximum number of credit hours a student may attempt in an effort to complete a program of study, and at the same time, remain eligible to receive financial assistance.

Key Points to remember regarding the quantitative standard of the time frame:

1. Since the time frame sets the limit for the number of credit hours a student may attempt and remain eligible to receive financial assistance, it is very important that the student plan class schedules carefully with their academic advisor and/or the student services counseling staff. It is the responsibility of the student to register only for classes listed in their chosen major in the College Catalog and for scheduling only the number of hours they are capable of completing. SOME STUDENTS WILL BE REQUIRED TO TAKE PROVISIONAL COURSES WHICH WILL ALSO BE COUNTED AS HOURS ATTEMPTED. Students are responsible for knowing the policy concerning the limitation on hours attempted for financial aid purposes. Registering for more courses than a student is capable of completing, having to withdraw from classes, registering for courses for which the student has already received credit, taking courses in error, etc., all impact the time frame and could result in losing financial aid eligibility before completing a program of study.
2. The time frame is cumulative, therefore, by switching programs without completing the initial program the student runs the risk of losing financial aid eligibility.
3. The time frame begins when the student first attends the College and continues until that student successfully completes a program of study regardless of the number of years that may elapse between enrollment periods.

4. Only students who successfully complete a program of study will be given a new time frame should they decide to enter a subsequent program of study. The credit hours attempted to complete the first program will not be included as hours attempted in the time frame for the second program of study.
5. Students who take course work and are unclassified will have those hours attempted added to their time frame if and when they enter a specific program of study.
6. Provisional students accepted into a program of study who are required to take guided studies or developmental course work as determined by placement testing results and the professional judgment of a student services counselor, will have the credit hours attempted for such course work count toward their time frame.
7. The credit hours for course incompletes, withdrawals, and repetitions will be counted as hours attempted toward the time frame.
8. Students switching from a degree program to a vocational program who have or nearly have exceeded the initial time frame may appeal to the Director of Financial Aid for a time frame extension.

Satisfactory Progress Increments. The College will monitor satisfactory academic progress at two points during each academic year (i.e. at the end of both the Fall and Spring Semesters). The only exceptions to this would be (1) for those students returning to the College who have a prior academic record at the College. Such students would be monitored at the time they reenroll since the federal regulations require the standards for progress to cover all periods of enrollment, including those periods for which the student did not receive aid from Title IV funds, and (2) for students who return to the College at their own expense in an effort to reestablish their eligibility. These students would be monitored each term until they meet the satisfactory progress definition.

Based upon the number of credit hours attempted, the student will be expected to complete a minimum number of credit hours with satisfactory grades as described earlier and at the same time maintain a minimum cumulative grade point average without exceeding the maximum time frame. Failure to meet the standards outlined will result in termination of financial aid eligibility. Due to the leniency of the satisfactory progress standards early in the student's program of study, the College will not provide an automatic probationary period during which the student may continue receiving financial aid while attempting to improve upon the number of credit hours completed and/or the cumulative grade point average required. Nevertheless, the College will provide an appeal procedure for reinstatement of financial aid eligibility.

Appeal of Financial Aid Termination. To appeal financial aid termination a student must be able to demonstrate mitigating circumstances. The procedure for appeal is:

1. A student will indicate in writing to the Director of Financial Aid the reasons why he/she did not make satisfactory progress and why financial aid should not be terminated. Documentation to support the appeal is permitted.
2. The Director of Financial Aid will review the appeal to determine whether or not termination of aid is justified. The student will be advised of the decision in writing.
3. A student wishing to appeal the decision of the Director of Financial Aid may do so, in writing, to the Student Financial Aid Committee, c/o the Financial Aid Office. Additional appeals may be made through the Student Due Process Procedure and then to the President of the College if deemed necessary by the student.

Reinstatement of Financial Aid Eligibility. Should a student have his/her financial aid eligibility terminated due to not meeting the satisfactory progress definition, termination will continue until the student enrolls for a subsequent academic term at his/her own expense and completes the term satisfying the satisfactory progress definition. Once the satisfactory progress definition is met eligibility is reinstated for the subsequent satisfactory progress increment. In addition, financial aid eligibility will immediately be reinstated for all appeals upheld.

Scholarships

Generally, scholarships are awarded only to those applicants who have completed the *Application Procedure* for student financial assistance outlined earlier. Most scholarships awarded

by the College are restricted to a specific program of study and are based on financial need. The College does award a limited number of merit scholarships to qualifying second-year students which are program specific and require the endorsement and/or screening of faculty in the applicant's department of study. Students needing more information about these limited scholarships should call the Financial Aid Office at 828/254-1921, Ext. 162.

All students are encouraged to seek out scholarships offered by clubs and organizations in their communities. A collection of scholarship booklets are kept on reserve for student use in the Resource Room of the A-B Tech Financial Aid Office in the Azalea Building.

An excellent source for scholarships is located on the World Wide Web. Students can do searches by accessing www.finaid.org and using the Free Scholarship Search (FASTWEB). FASTWEB alone contains a database of more than 180,000 scholarships. The Web site of the North Carolina State Education Assistance Authority, www.ncseaa.edu/, lists scholarships available to North Carolina residents only.

Other Financial Aid Information

In addition to scholarships, information about grants, loans and work programs is also available on the Internet. Some recommended sites are:

www.ed.gov/offices/ope	Click on "Information for Students" for federal student aid information.
www.cfnc.org	Provides comprehensive information about scholarships, loans and other programs/issues.
www.nasfaa.org	Click on "Financial Aid Information for Students, Parents & Counselors;" provided by the National Association of Student Financial Aid Administrators.
www.cfi.org	Provides comprehensive information about student and parent loans.

Veteran's Educational Benefits

The Veteran's Counselor will help incoming veterans evaluate their eligibility for benefits. The Veteran's Office is located in the Counseling Center in the Azalea Building. Individuals applying for veteran's benefits must meet all entrance requirements and are required to meet the College's academic standards as they progress through their programs. Failure to meet these academic standards of progress will result in loss of veteran's educational benefits.

Developmental Studies

This department provides post-secondary students with instruction in basic math, English, and reading in structured and unstructured settings. A tutorial component serves curriculum students needing assistance outside of class in math or English related subjects. Tutoring is accomplished through individual sessions, small groups, and computer-assisted instruction.

As the point of entry for learners needing academic development, Developmental Studies is sensitive to the needs of students making a transition to a College environment. Instructors design course work to accommodate first-time College students, those returning to school after an absence, and those with disabilities. The objective of this department is to enable students to develop the skills and behaviors that will lead to successful achievement in A-B Tech's curricula. The minimum passing grade is "C." The grade of "D" will not be used for Developmental Studies courses.

Developmental Studies courses are listed in the class schedules. Current lab schedules may be obtained from Developmental Studies personnel.

Distance Learning and the Virtual Campus

Students who cannot fit a traditional classroom course into their schedules or who prefer to try something new, have several alternatives, including Web-based classes on the Internet, telecourses on videocassette, and interactive television classes between campuses or on the North Carolina Information Highway (NCIH). All alternative instructional formats require student workloads and outcomes comparable to a traditional class.

Web classes. Web classes are offered through the College's Web site. Like traditional classroom-based courses, these classes have assignment deadlines and tests, but the student chooses when to work on the course. Web class sections are designated "OL" in the curriculum schedules. To register for a Web class, a student must contact the instructor by e-mail prior to the first week of classes to be considered "active" in the course.

Telecourses. Telecourses are primarily College by Cassette (CbC) courses, which use videotaped information that may be watched at home instead of attending class lectures on campus. Small groups in the class may meet to work on projects and take tests. One-to-one contact with the instructor is still expected. CbC sections are designated "VC" in the curriculum schedules. A CbC course usually includes an orientation by the instructor during the first week of classes. If many students are interested in the same course, the video portion may be telecast on Asheville Educational Television, Charter Communications Channel 21.

ITV. ITV (interactive television) uses the North Carolina Information Highway (NCIH) or goes "point-to-point" over data lines to link classes. ITV classes are offered on campus in Room 105 of the Sycamore Building. NCIH allows students to interact with students from other educational institutions in the state. Some ITV courses will be taught by A-B Tech instructors, while others will feature instructors from other institutions. A-B Tech has also established an ITV link with its Madison Campus allowing students at both sites to receive simultaneous instruction. These classes are designated "ZD" for day and "ZN" for night classes in the curriculum schedules.

The Virtual Campus. The Virtual Campus may be accessed through A-B Tech's Web page. *For current offerings, times, and locations of courses, as well as phone numbers, alternative orientation formats, and specific course requirements, go to www.asheville.cc.nc.us and click on the Virtual Campus link (or access the page directly at www.asheville.cc.nc.us/vcampus).* The Virtual Campus may be accessed from a home computer or from several computers on campus.

Learning Resources Center

The Learning Resources Center (LRC) includes the Library and Audiovisual Services. Together, they provide information, guidance, and instruction in a wide range of resource material. In addition, the LRC provides a variety of A-V equipment to supplement classroom, laboratory, and shop experiences.

The Library

The library makes available all of the LRC's collection of materials, both print and non-print formats. The collection is well organized for easy use. Automated catalogs, circulation, electronic indexes, and reference services provide the user with state-of-the-art access to research and recreational materials. The primary objectives of the library are to provide information services and assist the user with utilization of the collection in an attractive, well-equipped facility that is open to the College and the community.

HOURS: Monday-Thursday	8 a.m. - 8:45 p.m.
Friday	8 a.m. - 4:15 p.m.

Audio-Visual Services

Audiovisual services are available to the College faculty, staff, and students. These services include production, materials, and equipment to support the instructional program and related activities, including satellite reception for seminars and teleconferences. The LRC maintains an inventory of audiovisual equipment to support College sponsored activities, along with an extensive collection of audiovisual materials.

Computer Services

A staffed computer lab is available for student use.

Asheville-Buncombe Technical Community College Foundation

The Asheville-Buncombe Technical Community College Foundation was established in 1996 as a separate 501 (c) 3 non-profit corporation. Its sole purpose is to provide financial support for the students and programs of Asheville-Buncombe Technical Community College. The ABTCC Foundation meets critical needs that cannot be addressed in the College's normal operating budget. All gifts are tax deductible as allowed by law.

Goals

Scholarships. It is the goal of the A-B Tech Foundation to provide financial assistance to any citizen in the College's service area who cannot afford college expenses but who desires an education.

The A-B Tech Foundation awards scholarships annually. Applications are available from the Financial Aid Office located in Azalea in early March. Applicants must complete the Free Application for Federal Student Aid (FAFSA). The applications are due to the Financial Aid Office in May and the recipients are notified in July.

Technology. It is the goal of the A-B Tech Foundation to develop resources that would enable the College to keep pace with rapidly changing technology and to continue to incorporate cutting-edge technologies into existing course offerings and services.

Faculty/Staff Mini Grants. It is the goal of the A-B Tech Foundation to generate monetary support to provide for updating of employee knowledge and skills commensurate with the latest technology.

Fernihurst. It is the goal of the A-B Tech Foundation to restore Fernihurst to its original grandeur so it can house the College's culinary program and broaden the training experience for students as well as make them employable by providing a classical dining atmosphere in which they can serve the public.

For more information about the Foundation call 254-1921, Ext. 176 or 179.

General Student Information

Class Attendance

Regular and punctual class attendance is expected of all students for them to achieve their potential in class and to develop desirable personal traits necessary to succeed in employment. Instructional time missed is a serious deterrent to learning. Students are responsible for fulfilling the requirements of the course by attending and completing course assignments. An accurate record of class attendance will be kept.

If instructional time is missed for excusable reasons, the student will be permitted to make up work to the extent possible. Because of the nature of some learning experiences, especially clinics, labs and shops, it is difficult, if not impossible to duplicate the work of the class. In some courses, absence or tardiness of an individual may be a major disruption to the performance of others in

the class or an inconvenience to other organizations such as hospitals and clinics. The faculty may develop guidelines for advance notice of absences, makeup of work, etc. Students will be informed of guidelines at the beginning of the course.

To receive course credit, a student should attend a minimum of 80% of the contact hours of the class. Upon accumulating absences exceeding 20% of the course contact hours (see table below), the student may be dropped from the class and will be awarded a grade of "U," unless the student follows the official withdrawal procedure before the grade of "U" is recorded. A tardy is defined as arriving late for class, leaving early, or being away from class without permission during class hours. Three tardies may constitute one absence.

Examples of Excessive Absence

Total Class Contact Hours	Excessive Hours Absence
48	10
64	13
80	16
96	19
112	22
Other Hours	Hrs. x 0.20 rounded to the nearest hour

It is the joint responsibility of the student and instructor to discuss attendance patterns that will endanger the success of the student in the course. If it appears that a student will not be able to complete a course successfully, the instructor may advise the student to withdraw no later than the official withdrawal date at the 75% point of the class.

Code of Student Conduct

Almost 5,000 students, faculty, and staff are part of the A-B Tech family. Every year hundreds of people graduate from the College, and hundreds of new freshmen take their places. To protect all these students and employees from the irresponsible actions of others, the College has adopted basic rules of student conduct. Students who have been charged with a violation of these rules may be assigned consequences based upon the seriousness of the offense. A hearing will be conducted by the Vice President for Student Services.

Consequences for violations include verbal warnings, written warnings, disciplinary probations, particular consequences adapted to the violation, and suspensions. Any disciplinary decision rendered by the Vice President for Student Services may be appealed to the Student Due Process Appeals Committee. Any student charged with a violation of the Code of Student Conduct will receive a written copy of the charges and an appointment for a hearing. Rights, as they pertain to the hearing, are listed elsewhere in this manual.

The following actions are specifically prohibited on this campus under the Code of Student Conduct:

1. Academic Dishonesty - You may not deceive any official of the College by cheating on any assignment, examination, or paper. This includes plagiarism, which is defined as the theft and use of the ideas or writings of another as one's own.
2. Alcoholic Beverages - You may not possess or use alcoholic beverages on campus. You may not be under the influence of alcoholic beverages on campus.
3. Animals - You may not have an animal of any kind on campus. This includes animals left within a vehicle. Working dogs, such as police dogs and Seeing Eye dogs, are permitted.
4. Assault - You may not strike or threaten to strike another person for any reason whatsoever. Threatening to strike another person is defined as assault, and striking another person is defined as battery.
5. Damage to Property - You may not damage property of the College or of any other person working at or attending the College.
6. Disobedience - You may not disobey the reasonable directions of College employees,

including administrators, faculty members, security officers, and other staff employees.

7. Disorderly Conduct - You may not conduct yourself in a way which will interrupt the academic mission of the College or which will disturb the peace of the College.
8. Disruption - You may not disrupt the normal activities of the College by physically or verbally interfering with instruction, meetings, traffic, or scheduled administrative functions.
9. Drugs - You may not possess, use, or be under the influence of any narcotic or illegal drug on campus in violation of the laws of the state of North Carolina or of the United States.
10. False Information - You may not present to the College or its employees false information; neither may you knowingly withhold information which may have an effect on your enrollment or your status in the institution and which is properly and legally requested by the College.
11. Gambling - You may not gamble on campus.
12. Internet Use - The College has an extensive policy on appropriate use of the Internet. Users of the College computers acknowledge the policy whenever they sign on.
13. Possession of Weapons - You may not have a weapon of any kind, including a knife, stun gun, or any firearm in your possession on campus. Law Enforcement officers are exempt from this prohibition.
14. Professional Conduct - Various curricula have specific codes of professional conduct for which you may be held accountable, if you are enrolled in those curricula.
15. Public Laws - You may not violate the laws of the state of North Carolina while on campus. Doing so may lead to legal actions as well as campus discipline.
16. Sexual Harassment - You may not sexually harass, either verbally or physically, any member of the College community, including other students, employees, or other persons on the College campus.
17. Theft - You may not steal the property of another individual or of the College. Students who are caught stealing will be required to make restitution and may be eligible for civil prosecution as well as College discipline.

Rights of Due Process

If you are accused of a violation of the Code of Student Conduct, A-B Tech guarantees you these rights as the matter is resolved:

1. You have the right to a specific written notice of the charges against you.
2. You have the right to know the names of your accusers and to have a copy of all their written statements regarding the charges.
3. You have the right to decide whether your hearing will be public or private.
4. You have the right to a prompt hearing.
5. You have the right to have a counsel of your choice present at the hearing.
6. You have the right to confront your accusers and to hear all witnesses.
7. You have the right to present witnesses or evidence in your own behalf.
8. You have the right to remain silent to avoid self-incrimination.
9. You have the right to a full and complete record of the hearing.
10. You have the right to an appeal.

Student Appeals Policy

If you feel that you have been disciplined unfairly or wish to appeal some other decision which you consider to be unjustified, unfair, or a violation of your rights, then you should appeal that decision. In order to appeal the decision, you should use the Student Appeal Policy which is summarized below. A complete copy is available from the Vice President for Student Services in the Azalea Building.

The intention of the Student Appeal Policy is that the faculty member or other employee who

has been responsible for the act which you consider to be unfair will attempt, in good faith, to resolve the dispute. You are encouraged to discuss the matter with him or her in an attempt to resolve it. If it is not possible to resolve the matter at this level, then you should bring the matter to the attention of the Vice President for Student Services.

The Vice President will hold an informal session to which you and the employee concerned are invited. Every attempt will be made to resolve the matter at that level, even if multiple sessions are required. If the problem is not resolved, then the Vice President for Student Services will inform you of the formal appeals procedure and provide you with an appeal form.

The appeal form must be filled out and returned to the Vice President for Student Services within five days. The appeal form must be signed by the student and the employee involved. It should also be signed by the supervisor or supervisors of the employee involved up the chain of command through the appropriate Vice President. Each of these supervisors may propose solutions to the disagreement which, if accepted by both parties, will result in resolution of the problem. Failure to reach agreement at any level in the appeal process will require that the matter be taken up to the next higher level.

Particular attention will be made to ensuring that night students can have access to supervisors who are otherwise available during the day hours only.

If the matter remains unresolved through the level of the appropriate Vice President, then you should return to the Vice President for Student Services who will then turn the matter over to the Student Appeals Committee. This Committee, which is composed of two students, two faculty members, a Student Services employee, and a nonteaching professional who will serve as chairperson, is called together by the Vice President for Student Services. The chairperson will conduct the meeting and render a decision which reflects the popular opinion of the Committee. If further appeal is necessary, then the matter is referred to the President. The decision of the President is final.

When this policy is used to appeal a disciplinary action taken by the Vice President of Student Services in his or her capacity as the College discipline officer, the appeal will go directly to the President whose decision is final.

As stated earlier, a complete copy of this policy is available from the Vice President for Student Services, and you are encouraged to see him or her if you feel that an appeal is necessary.

Code of Classroom Conduct

A-B Tech is an institution for adult learning. It is a partnership between instructors with the desire to teach and students with the desire to learn. In order to create an appropriate environment for teaching and learning, there must be respect for the instructor and fellow students. Listed below are guidelines for classroom behavior, which the College has established to ensure that the learning environment is not compromised.

1. Attendance — You are expected to be in class the entire class time. Do not enter late or leave early. Rare exceptions may be excused, particularly under emergency circumstances, but you should be prepared to explain your tardiness to the instructor after class. Likewise, the need to leave early should be explained to the instructor before class.
2. Absences — Inform the instructor in advance if you know you are going to miss class. Also, take responsibility for getting missed assignments from other students. Do not expect that you will be allowed to make up work, such as unannounced quizzes or tests, after an absence. Instructors are not responsible for re-teaching the material you missed because of absence.
3. Conversation — Do not carry on side conversations in class.
4. Other Activities — You may not work on other activities while in class. This includes homework for other courses or other personal activities.
5. Internet — In classes where Internet access is provided, you may use the Internet for valid, academic purposes only. You may not use it for open access other non-academic sites, which are unrelated to the course.
6. Sleep — Do not sleep in class.
7. Attitude — You are expected to maintain a civil attitude in class. You may not use

inappropriate or offensive commentary or body language to show your attitude regarding the course, the instructor, assignments, or fellow students.

8. Profanity and Offensive Language — You may not use profanity or offensive language in class.
9. Cell phones and beepers — You may not receive or send telephone calls or pages during class. You are responsible for turning off cell phones and beepers upon entering class.
10. Guests — You may not bring unregistered friends or children to class.
11. Food, Drink, Tobacco Products — You may not have food or drink in class. You may not use tobacco products in the buildings of A-B Tech.
12. Personal Business — You may need to transact personal business with the instructor, asking him or her to sign forms. Plan to do this before instruction begins or after class.

Typically, violations of the Code of Classroom Conduct will be dealt with as minor infractions. However, repetition of minor infractions or other more serious violations of the Code of Student Conduct may lead to removal from the classroom while the matter is resolved and referral to the Vice President of Student Services for disciplinary action.

Grading System

Final grades will be issued at the end of the term to all students. Students will be graded on the achievement of technical skills, ability to work under supervision, interest in work, initiative, and the ability to apply related information. A student who wants to contest a grade must do so within six weeks of the awarding of the grade. A grade cannot be changed after this period without approval by the department chair and the division dean.

Students will be graded by the following system:

A	90-100	Excellent academic performance, consistent mastery of facts and concepts, and a thorough understanding of course content.
B	80-89	Good academic performance, high-level mastery of course content.
C	70-79	Average academic performance.
D	60-69	Marginal academic performance, poor mastery of course content.
F	Below 60	Very poor performance, no demonstration of even minimal mastery of course content.

Other grades that may appear on the college transcript include:

AP Advanced Placement course credit.

AR North Carolina High School to Community College Articulation Agreement course credit.

CR CLEP (College Level Examination Program) course credit.

I Incomplete—Assigned when a student is unable to complete work or take a final examination because of illness or other reasons over which the student has no control. An incomplete grade must be completed within the first six weeks of the next semester. Otherwise, the grade becomes an "F."

NS No Show—Student enrolled, but never attended the class. This will not influence the quality point ratio.

P Proficiency Credit by Examination (see *Credit by Examination* section).

T Transfer credit from other colleges, universities, and military credit.

TS Transfer credit for NCCC semester courses which can be used only for diploma or A.A.S. programs.

U Unofficial Withdrawal (penalty)—Assigned when the student does not follow the College's official withdrawal policy by the course withdrawal deadline or is dropped for excessive absences. This is the equivalent of an "F" grade and **will** influence the quality point ratio.

W Official Withdrawal (no penalty)—Assigned when the student OFFICIALLY WITHDRAWS. This **will not** influence the quality point ratio.

X Continuing—Assigned when a student is unable to complete work during the current

semester because of class scheduling over consecutive semesters or at the discretion of the instructor to allow additional time to complete work. A "contract" of conditions for completion and time limit, not to exceed 12 months, will be executed by the instructor and signed by both the instructor and student. If the terms to remove the grade of "X" are not fulfilled by the end of the contract period, the grade will revert to the average held at the beginning of the contract period including zeros for work not completed.

Y Audit (see *Auditing Courses* section).

The pound sign next to a grade indicates that the course has been excluded from the quality point average either through course repetition or Academic Fresh Start.

Privacy of Student Records

1. In compliance with the Family Educational Rights and Privacy Act of 1974 (FERPA), Asheville-Buncombe Technical Community College will not release information concerning its students except for directory Information, and as stipulated in paragraph 3 below. Directory Information is defined as:

a. name
b. address (physical and e-mail)
c. telephone number
d. date of birth and place of birth
e. major field of study
f. dates of attendance
g. degrees received
h. Dean's List

Directory Information will be released to anyone who asks for it, unless the student specifies in writing to the Student Records and Registration Office that this information is to be withheld. In such cases, no directory information will be released.

2. A student over the age of 18 is considered an adult within the definition of the law and controls who has access to his or her records. A parent of an eligible student does not automatically have access to the student's records. In order for parents to have access to a student's records, beyond directory information and without written permission from the student, a parent must certify that the student is economically dependent as defined in Section 152 of the Internal Revenue Code of 1954. If a parent can prove dependency to the Student Records and Registration Office by showing a copy of the parent's current tax report form or another acceptable report of current dependency, then the parent may have total access to the student's file.

3. Asheville-Buncombe Technical Community College will release a student's educational records without his or her approval only as follows:

a. to Asheville-Buncombe Technical Community College officials who have legitimate educational interest in the records.
b. to officials of another college or university in which a student seeks to enroll.
c. to certain federal and state educational authorities for purposes of enforcing legal requirements in federally supported educational programs.
d. to persons involved in granting financial aid for which the student has applied.
e. to state and local authorities to whom information is required to be disclosed under the provisions of a statute adopted prior to Nov. 19, 1974.
f. to testing, research, and accrediting organizations.
g. in compliance with a court order or lawfully issued subpoena.
h. in very narrowly defined emergencies affecting the health and safety of the student or other persons.
i. to parents of eligible students under the provision of paragraph 2 above.

4. For further information concerning the Federal Educational Rights and Privacy Act, students may contact the Student Records and Registration Office.

Adding a Class

A student may add a class to his or her schedule by completing a "**Drop/Add Registration Change Notice**" form in the Student Records and Registration Office. A class may only be added during the first five days of a semester. During Summer Session or mini-mesters, a class may only be added during the first three days of the term.

Dropping/Withdrawing from a Class

In order to officially drop or withdraw from a course without academic penalty, the student must complete the appropriate form and submit it to the Student Records and Registration Office by the deadline.

The student may **drop** classes through the first 10% of the term. (For full semester classes the 10% point occurs on the eighth day. For mini-mesters the 10% occurs on the fourth day. For Summer Session the 10% occurs on the fifth day.) To drop a course, the student should fill out a **"Drop/Add Registration Change Notice."** This form can be obtained in the Student Records and Registration Office. In the case of drops, the course(s) will not be included on the transcript.

After the 10% point of the term, a student wishing to **withdraw** from a class must complete a withdrawal form. Students who are **not** receiving financial aid or veteran's benefits may use the "Quick Withdrawal Form." If the student receives financial aid, he or she must use the "Course Withdrawal Registration Change Notice" form which must be signed by the Director of Financial Aid or his or her designee. If the student receives veteran's benefits, he or she must also use the "Course Withdrawal Registration Change Notice" form which must be signed by the Veteran's Affairs Counselor (who may also require the instructor to sign the form and note the last date of attendance in accordance with federal requirements). **All withdrawal forms must be submitted to the Student Records and Registration Office during the first 75% of the term.** (For full semester classes the 75% point occurs at the end of the 12th week. For mini-mesters it occurs at the end of the sixth week. For Summer Session it occurs in the middle of the seventh week. Deadline dates will be published in the *Student Handbook and Events Calendar* each year.) In the case of a withdrawal, the student will receive a grade of "W," which will not influence the quality point ratio, but which will appear on the transcript.

Any student who ceases to attend class and does not complete the appropriate withdrawal form and submit it to the Student Records and Registration Office by the 75% point of the term will have a grade of "U" recorded for the class. This is the equivalent of an "F" and will affect the quality point ratio.

Exceptions such as serious illness or job transfer requiring withdrawal from all classes after the 75% point of the term will be considered on an individual basis by the Vice President for Student Services. A student who has withdrawn from a class may no longer attend the class.

College Withdrawal

Students who withdraw from the College (i.e. drop *all* courses) must complete the appropriate withdrawal form for *each* class prior to the 75% point of the term (see previous section). A grade of "W" will be assigned.

To withdraw from the College *after* the 75% point, a student must:

1. Obtain a withdrawal form from the Vice President for Student Services.
2. Document valid reason(s) for needing to withdraw.
3. Discuss the need to withdraw with the Vice President for Student Services. Students who are approved for late withdrawal from *all* courses will receive grades of "W."

If an emergency prevents the student from completing the withdrawal process before leaving the campus, the student should call, write or arrange for someone to contact the Vice President, Student Services.

Quality Points

At the end of each semester quality points are assigned in accordance with the following formula. (The minimum grade-point ratio for graduation is 2.00 or an average of grade "C.")

A	4 quality points per credit hour	F	no quality points
B	3 quality points per credit hour	I	no quality points
C	2 quality points per credit hour	U	no quality points
D	1 quality point per credit hour	W	no quality points

Quality ratings are determined by dividing the total number of quality points by the number of hours attempted (excluding grades of "W"). A ratio of 2.00 indicates that a student has an average of "C."

Grades for Repeated Courses

If a student has a failing grade in a required course, the course must be passed prior to graduation. If a student fails a prerequisite course, it must be repeated successfully before beginning the next course. This could result in the student being enrolled for a longer period than is normally required to complete requirements for graduation.

As courses are repeated, the higher grade becomes the official grade. Only a grade of "D" or above can replace an existing grade. The student must submit a "Transcript Correction" form to the Student Records and Registration Office to request that the lower grade be excluded in the grade point average calculation.

Standards for Academic Progress (Academic Warning, Probation and Suspension Policy)

The College has established this policy to:

- provide students with a warning when they fail to meet minimum academic performance standards;
- limit scheduling when a student's academic performance indicates the necessity for intervention;
- provide a means of preventing and/or terminating prolonged failure.

This policy applies to all students, classified and unclassified.

Students whose semester grade point average (GPA) falls below 2.0 are subject to academic warning, which may be followed by probation and suspension. *GPA will be calculated using the current official grade for each course taken that semester at Asheville-Buncombe Technical Community College.*

I. Academic Warning

Students failing to meet the minimum GPA during any semester will receive an academic warning. The warning will be posted on the grade report for that semester and the student's advisor will be notified. The warning advises students of their academic status and encourages them to meet with their advisor immediately to examine present academic plans.

II. Probation

Students whose semester GPA falls below 2.0 for two consecutive semesters will be placed on probation, which means the student **will** have restricted scheduling and **must meet with his or her advisor to do one or more of the following:**

- limit the number of hours attempted;
- schedule preparatory or remedial courses as needed;
- schedule repeat of courses.

Academic probation will be posted to the student's official transcript.

III. Suspension

Students whose semester GPA falls below 2.0 for three consecutive semesters will be placed on academic suspension for one semester. This means that those students will not be allowed to register for curriculum courses. Continuing Education courses may still be taken. Academic suspension will be posted to the student's official transcript.

IV. Appeals

Academic Suspension may only be appealed through the Vice President for Student Services. Appeals will be considered on the day before classes begin each semester.

V. Reenrollment After Suspension

Students may reenroll after having been suspended for one semester. They must contact the Counseling Department to discuss and develop appropriate plans for their academic success. The counselor will assign the student to a faculty advisor who will help carry out the plan for academic achievement developed between the student and the Student Services counselor.

Dean's List

1. For the Dean's List, students must be enrolled in an academic program, carrying a minimum of eight credit hours of curriculum courses numbered 100 or above.
2. Students must have a minimum 3.75 quality point average to qualify for the semester under consideration.
3. Grades of F, I, U, or X will eliminate a student from the Dean's List for that semester. Students receiving credit for a course by examination are not affected.
4. The Dean's List will be compiled by the Director of Enrollment Management, the Administrative Assistant of Instructional Services, and Department Chairpersons. The draft of candidates will be posted on major bulletin boards for students to review. The Vice President, Instructional Services, will be responsible for final approval and publication.

Degrees, Diplomas, and Certificates

Degree Programs

Asheville-Buncombe Technical Community College confers the following degrees: Associate in Arts, Associate in Applied Science, and Associate in Science. These degrees are conferred in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Diploma Programs

Asheville-Buncombe Technical Community College awards a diploma in all one-year applied curricula. A diploma may be awarded upon completion of the first half of some degree programs. Diplomas are granted in the name of the North Carolina State Board of Community Colleges when all requirements for graduation have been satisfied.

Certificates

Certificates may be issued in the name of the Asheville-Buncombe Technical Community College to students who successfully complete designated short-term programs or course sequences.

Multiple Degrees/Diplomas/Certificates

Students may earn multiple degrees, diplomas, and certificates upon completion of program requirements. Students who earn the Associate in Arts (A.A.) Degree may also earn the Associate in Science (A.S.) Degree by completing at least 12 additional semester hours of mathematics and/or science courses. Students who earn the Associate in Science (A.S.) Degree may also earn the Associate in Arts (A.A.) Degree by completing at least 12 additional semester hours of humanities and/or social/behavioral science courses.

Requirements for Graduation

The College holds one graduation ceremony each year in August. To graduate with a diploma or degree, students must meet the following minimum requirements:

1. Declare an academic major and complete the requirements of a College approved program of study according to the student's official catalog. The official catalog is determined as a joint decision by the student and the academic advisor and must be a College catalog dated no more than five years prior to the date of graduation (i.e., a student graduating in 2002 cannot use a catalog earlier than 1997-98). Students should be aware that prerequisites for courses change frequently and that they will be required to meet the prerequisites which are in place at the time a course is taken. The student must document the official catalog selected on the Application for Graduation. The student cannot select a catalog which was in effect prior to admission to his/her program of study.
2. Each course in the program of study must be completed by one of the following methods:

a. Take the course at A-B Tech.
b. Receive transfer credit.
c. Take an A-B Tech proficiency exam.

At least half of the credit hours in a program of study must be earned at this College by taking courses and/or proficiency examinations. Any exception must be approved by the Vice President, Instructional Services.

3. Earn a grade of at least "C" in each course with a major prefix and a minimum average of 2.0 ("C") quality points for the current program. Students completing their program of study with a program grade point average of 4.0 will be graduated with highest honors. Those who have a minimum program GPA of 3.75 will be graduated with high honors and those with a minimum program GPA of 3.50 will be graduated with honors. The student must assume primary responsibility for assuring that all requirements for graduation are met.
4. **Submit an application for graduation to the Student Records and Registration Office the semester before completing degree requirements.** Purchase caps, gowns, and diplomas in June. (Students who cannot attend graduation must still pay for the diploma.)
5. Be in good standing; fulfill all financial obligations to the College; library clearance is also required.
6. Be present for graduation and attired in the proper academic robe. (Students who do not attend the graduation ceremony must submit to the President a written request to be excused at least two weeks prior to graduation.)

Changing Majors or Adding a Second Major

In order to change majors, or add a second major, the student needs to see a counselor/advisor in Student Services. A change-of-major form indicating the new major or the second major must be completed by the counselor/advisor. The catalog in effect at the time of this declaration will be the catalog for this major. (See *Requirements for Graduation.*)

Campus Services

LRC. The LRC provides a variety of services and resources to support high-tech, information-dependent curriculum programs. The LRC serves a variety of informational needs of students and faculty, including those who are utilizing distance education technology. All routine library functions such as catalog, circulation, and reserves are automated to provide electronic access within the main campus, Madison campus, and remotely to users who have home computers. These resources include interlibrary loans, electronic and print indexes, online full-text databases, Internet and Web-based products (including NCLIVE and NCLIVE@home.) These resources are available through the College's Web site and the LRC's homepage.

The LRC is open Monday through Friday. Special needs clientele will be assisted by the LRC staff in utilization of resources. In addition, the LRC has many traditional print and non-print resources, with coin-operated copiers and microform reader/printers for use by all patrons. Audiovisual services and a computer lab are available for use by currently employed faculty and staff and by currently enrolled students.

Dental Clinic. Throughout the year the Allied Dental Department provides oral health services, such as patient education, dental X-rays, cleaning the teeth, nutritional counseling, and sealants. During Spring and Summer semesters limited dental services such as fillings, crowns and partial dentures are also available. A nominal fee is charged for these services. Call the Allied Dental Clinic, Ext. 255, for an appointment and approximate charges for services.

Bookstore. A bookstore is operated by the College for the convenience of students and staff members to provide required textbooks and materials. Students should plan to purchase all texts and materials at the beginning of each semester.

Textbook costs vary considerably depending upon the curriculum and semester. Book costs also vary from year to year because of changes in curriculum book prices, texts, and material requirements. Texts and materials will be made available in alternative accessible formats for individuals with disabilities upon request to the ADA Coordinator.

Child Care. A-B Tech offers child care services for children of College students. Faculty, staff, and the general public may also apply for the service. The Center, operated by Buncombe County Child Development, is open during daytime hours.

The program accepts children from two months to five years. Individuals who meet State and Federal income guidelines may apply for financial assistance. Arrangements can be made by calling either 255-5725 or 255-5111 from 8:30 a.m. to 5 p.m. Monday through Friday.

College Closing or Delayed Opening. The College will either be closed or opened on a delayed schedule when inclement weather conditions warrant such a decision. Closing or delaying announcements are placed on the switchboard automated attendant and will be made on Asheville radio and television stations and some surrounding community radio stations. Separate decisions and announcements are made for the day and evening programs.

Food Services. Food service is available in the Oak Gym/Student Center. Breakfast and lunch meals, including sandwiches, salads, and soups, are prepared daily. Hours of operation are from 7 a.m. to 2 p.m. Vending machines dispensing soft drinks, coffee, and snacks are located at various locations around campus.

The Culinary Technology and Hotel and Restaurant Management students serve lunch and dinner on scheduled Thursdays during fall and spring semesters. See the student newspaper, *Voices*, for times, dates, and reservation information.

Parking Locations. Parking is provided at various locations around campus. Please refer to the campus map located in this catalog for specific sites. Students with disabilities are provided parking at all locations. Parking areas are lighted during evening hours. Spaces marked with yellow lines are reserved for faculty, staff, disabled persons, and visitors. White-lined spaces are reserved for students.

Honorary Societies. The College is proud to sponsor the Alpha Upsilon Eta Chapter of Phi Theta Kappa Academic Honor Society. Membership is open to any student who has a 3.5 GPA after 12 credits of completed work. Eligible students are welcome to seek more information from the Director of Student Activities in the Oak Student Center.

Recreation Center. A recreation center is located in the Oak Gym/Student Center for those students with spare time and who wish to play coin-operated video games or billiards.

Security. Security personnel are on duty 24 hours a day, seven days a week. Each security officer is certified to respond to medical emergencies.

Student Housing. Students are responsible for their own living accommodations. A-B Tech neither approves nor maintains housing facilities. Students who are looking for housing or roommates may check bulletin boards in the Azalea Building or the Oak Gym/Student Center.

Placement Service. No reputable College can guarantee jobs for graduates. However, the College will assist students and alumni in every possible way to obtain suitable employment. The College provides placement service for both full-time and part-time jobs through the Placement Office, which is located in the Oak Gym/Student Center.

Allied Health & Public Service



ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	*Associate Degree Nursing	Criminal Justice Technology	*Dental Assisting
Recommended High School Courses	Algebra II Advanced Biology Chemistry Composition Courses in Health Occupations Anatomy/Physiology Keyboarding	English courses, particularly those with emphasis on writing skills	Chemistry Advanced Biology Courses in Health Occupations Keyboarding
A-B Tech Entrance Requirements	Chemistry Biology English (4 units) Mathematics (2 units) *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).	High school diploma or GED *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day Night/Weekend Begins Fall	Day/Night Begins Fall. Can take single courses any semester.	Day Begins Fall
Degree	Associate in Applied Science	Associate in Applied Science	Diploma
Employment Opportunities	Hospitals Long Term Care Facilities Clinics Physicians' Offices Industry Community Health Agencies	Law Enforcement Highway Patrol Deputy Sheriff Private Security Magistrate Correctional Officer Surveillance Officer Alcohol Law Enforcement Wildlife Enforcement	V.A. Clinics Health Departments State Clinics Dental Schools Private and Group Practices Clinics

*See Selection Criteria and Procedures for Allied Health Programs brochure for full details.

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	*Dental Hygiene	Early Childhood Associate	Emergency Medical Science
Recommended High School Courses	Anatomy/Physiology Plane Geometry (or Algebra II) Advanced Biology Courses in Health Occupations Keyboarding	Composition Literature Keyboarding Courses in Childcare Occupations	Anatomy, Biology Mathematics Chemistry Composition Courses in Health Occupations Keyboarding
A-B Tech Entrance Requirements	Chemistry, Biology English (4 units) Mathematics (2 units, one must be Algebra) *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall	Day/Night Enter program at the start of any semester.	Day Begins Fall
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Dental Offices Education Local, State, and Federal Government Agencies Private Industry	Child Care Worker Child Care Assistant Director, Child Care Director, Preschool	Emergency Medical Services Hospitals Urgent Care Clinics Physicians' Offices Private Ambulance Companies

*See Selection Criteria and Procedures for Allied Health Programs brochure for full details.

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Fire Protection Technology	Medical Laboratory Technology	*Medical Sonography
Recommended High School Courses	Mathematics Chemistry Keyboarding	Anatomy Biology Applied Math Chemistry (strongly recommended) Geometry (strongly recommended) Keyboarding	Anatomy Advanced Biology Applied Math Physics Keyboarding
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Biology Algebra I English (4 units) Acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT). See *Selection Criteria and Procedures for Allied Health Programs* brochure for full details.	Biology Algebra I *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Night Begins Fall	Day Begins Fall	Day Begins Fall
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Municipal Fire Departments Government Agencies Industrial Firms Insurance Rating Organizations Educational Organizations	Hospitals Emergency Care Clinics Health Departments Physicians' Offices General Clinics	Hospitals Health Departments Physicians' Offices Imaging Centers Mobile/Traveling Services

*See *Selection Criteria and Procedures for Allied Health Programs* brochure for full details.

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	Phlebotomy	*Practical Nursing
Recommended High School Courses	High School Transcript or GED	Anatomy/Physiology Advanced Biology English Composition Courses in Health Occupations Keyboarding
A-B Tech Entrance Requirements	Acceptable score on reading placement test.	English (4 units) Mathematics Biology *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, College Board Computerized Placement Tests (CPT) See *Selection Criteria and Procedures for Allied Health Programs* brochure for full details.
Program Schedule	Day Fall Day Spring	Day Begins Fall
Degree	Certificate	Diploma
Employment Opportunities	Hospitals Physicians' Offices General Clinics	Hospitals Long-Term Care Facilities Physicians' Offices Industry Community Health Agencies

**See Selection Criteria and Procedures for Allied Health Programs brochure for full details.*

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

	*Radiography	Social Services	**Surgical Technology
Recommended High School Courses	Anatomy Advanced Biology Applied Math Physics (strongly recommended) Keyboarding	Composition Literature Keyboarding Courses in Sociology Psychology	Anatomy Biology Mathematics Chemistry Composition Health Occupations Keyboarding
A-B Tech Entrance Requirements	Biology Algebra I *Competitive selection* after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT). See *Selection Criteria and Procedures for Allied Health Programs* brochure for full details.	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall	Day/Night Begins Fall	*Day
Degree	Associate in Applied Science	Associate in Applied Science	Diploma
Employment Opportunities	Hospitals Health Departments Physicians' Offices Emergency Care Clinics Industry Imaging Centers	Case Aide Social Service Social Worker Aide	Hospitals Surgery Centers Physicians' Offices

**See Selection Criteria and Procedures for Allied Health Programs brochure for full details.*

***Pending NCCCS State Board Approval*

ALLIED HEALTH AND PUBLIC SERVICE EDUCATION

The Allied Health and Public Service Education division offers a variety of programs designed to meet the increasing demand for specialized professionals in the burgeoning health care, child care, and public service industries. The programs in this division present a broad range of career options for individuals desiring a career in a helping profession. The division offers a variety of programs at the Associate in Applied Science degree, diploma, and certificate levels. Some areas of study are offered on a day and evening basis.

In addition to classroom and laboratory instruction, each program emphasizes learning experiences at health and public service settings in the community. This extensive training at clinical, pre-hospital, laboratory, child care, or law enforcement facilities affords students a unique opportunity to develop the specialized skills required for employment in a health or public service profession.

An individual desiring training in a health or public service program should have a background in chemistry, biology, science, mathematics, and social sciences. The applicant to an area of study in this division should become familiar with the selection criteria and application deadlines for the specific program. Persons interested in a health or public service career are advised that professional licensure, certification, or employment may be denied to anyone who has been convicted of a felony or other crime involving moral turpitude.

A.A.S. DEGREE CONFERRED

Associate Degree Nursing
Criminal Justice Technology
Dental Hygiene
Early Childhood Associate
Emergency Medical Science
Fire Protection Technology
Medical Laboratory Technology
Medical Sonography
Radiography
Social Services
Surgical Technology*

DIPLOMA AWARDED

Dental Assisting
Practical Nursing

CERTIFICATE AWARDED

Basic Law Enforcement Training
Early Childhood Associate
Fire Protection Technology
Phlebotomy

*Pending NCCCS State Board Approval

Associate Degree Nursing

This curriculum provides individuals with the knowledge and skills necessary to provide nursing care to clients and groups of clients throughout the lifespan in a variety of settings.

Courses will include content related to the nurse's role as provider of nursing care, as manager of care, as member of the discipline of nursing, and as a member of the interdisciplinary team.

Graduates of this program are eligible to apply to take the National Council Licensure Examination (NCLEX-RN) which is required for practice as a Registered Nurse. Employment opportunities include hospitals, long term care facilities, clinics, physician's offices, industry, and community agencies.

Admission Requirements

1. Final admission to the Associate Degree Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.

Associate Degree Nursing
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (BIO, NUR prefix)		52
Related and general education courses including:		23
English/Oral Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	8	
Social Sciences	3	
Other	3	
PROGRAM TOTAL		75

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	168	Anatomy and Physiology I	3	3	0	4
ENG	111	Expository Writing	3	0	0	3
NUR	115	Fundamentals of Nursing	2	3	6	5
NUR	117	Pharmacology	1	3	0	2
NUR	133	Nursing Assessment	2	3	0	3
			11	12	6	17
Second Semester (Spring)						
BIO	169	Anatomy and Physiology II	3	3	0	4
CIS	110	Introduction to Computers	2	2	0	3
NUR	135	Adult Nursing I	5	3	9	9
			10	8	9	16
Third Semester (Summer)						
NUR	185	Mental Health Nursing	3	0	6	5
NUR	188	Nursing in the Community	1	0	6	3
SOC	215	Group Processes	3	0	0	3
			7	0	12	11

Fourth Semester (Fall)					
ENG 114	Professional Research and Reporting	3	0	0	3
NUR 125	Maternal-Child Nursing	5	3	6	8
NUR 255	Professional Issues	3	0	0	3
	Humanities Elective	3	0	0	3
		14	3	6	17
Fifth Semester (Spring)					
NUR 116	Nursing of Older Adults	2	3	3	4
NUR 235	Adult Nursing II	4	3	15	10
		6	6	18	14
Program Totals		**48**	**29**	**51**	**75**

Basic Law Enforcement Training

Basic Law Enforcement Training (BLET) is designed to give students essential skills required for entry-level employment as law enforcement officers with state, county, or municipal governments, or with private enterprise.

This program utilizes state-commission-mandated topics and methods of instruction. General subjects include, but are not limited to, criminal, juvenile, civil, traffic, and alcoholic beverage laws; investigative, patrol, custody, and court procedures; emergency responses; and ethics and community relations.

Successful graduates receive a curriculum certificate and are qualified to take certification examinations mandated by the North Carolina Criminal Justice Education and Training Standards Commission and/or the North Carolina Sheriffs Education and Training Standards Commission.

Specific Entrance Requirements

1. General college admission requirements.
2. Individuals must meet the Minimum Standard for Employment Criteria outlined in North Carolina Code Book—General Statute 17-A and Title-12 Chapter 9 North Carolina Administrative Code.
3. Individuals must be sponsored by a North Carolina law enforcement agency. The letter of sponsorship must:
    a. be signed by the agency head; i.e., Chief or Sheriff.
    b. include a statement of sponsorship that certifies that the applicant meets the standards for certification as stated in number two above.
    c. state that a background investigation was conducted.
4. Individuals must submit their sponsorship letter and college application to the Law Enforcement Training Center director at least 15 days prior to the courses scheduled start date. Applicants are accepted on a first-come, first-serve basis. Priority will be given to full-time employees of law enforcement agencies.
5. If accepted into the program, the student must submit completed North Carolina State Forms F-1 and F-2 on the first day of class. These forms are provided by the sponsoring agency and are not available at the College.
6. Prior to admission each student must achieve a reading score of at least the tenth grade. This testing can be done AFTER submitting your application for enrollment. The testing is done in the Azalea Building Monday through Thursdays: 8:30 am, 10:30 am, 1:30 pm, 3:30 pm, and 5:30 pm and Fridays: 8:30 am, 10:30 am, and 1:30 pm. Arrive 20 minutes early; no appointment is necessary.

Basic Law Enforcement Training Certificate Program

This program consists of:	Credit Hrs.
One major course	18

			Hrs. Per Week Class	Lab	Credit Hrs.
CJC	100	Basic Law Enforcement Training	8	30	18

Criminal Justice Technology

This curriculum is designed to provide practical knowledge of criminal justice systems and operations. Study will focus on local, state, and federal law enforcement, judicial processes, corrections and security services. The criminal justice system's role within society will be explored.

Emphasis is on criminal justice systems, criminology, juvenile justice, criminal and constitutional law, investigative principles, ethics and community relations. Additional study may include issues and concepts of government, counseling, communications, computers and technology.

Employment opportunities exist in a variety of local, state, and federal law enforcement, corrections, and security fields. Examples include police officer, deputy sheriff, county detention officer, state trooper, intensive probation/parole surveillance officer, correctional officer, and loss prevention specialist.

Criminal Justice Technology Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (CJC prefix)		54
Related and general education courses including:		21
English/Communications	9	
Humanities/Fine Arts	3	
Natural Science/Mathematics	3	
Social Sciences	3	
Other	3	
PROGRAM TOTAL		75

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
CIS	111	Basic PC Literacy	1	2	2
CJC	111	Introduction to Criminal Justice	3	0	3
CJC	121	Law Enforcement Operations	3	0	3
CJC	231	Constitutional Law	3	0	3
ENG	111	Expository Writing	3	0	3
			13	4	15

Second Semester (Spring)					
CJC	112	Criminology	3	0	3
CJC	132	Court Procedure and Evidence	3	0	3
CJC	151	Introduction to Loss Prevention *(or CJC 251)*	3	0	3
CJC	222	Criminalistics	3	0	3
HUM	115	Critical Thinking	3	0	3
			15	0	15
Third Semester (Summer)					
CJC	113	Juvenile Justice	3	0	3
CJC	114	Investigative Photography	1	2	2
CJC	131	Criminal Law	3	0	3
CJC	214	Victimology	3	0	3
ENG	114	Professional Research and Reporting	3	0	3
			13	2	14
Fourth Semester (Fall)					
CJC	211	Counseling *(or CJC 141)*	3	0	3
CJC	213	Substance Abuse	3	0	3
CJC	221	Investigative Principles	3	2	4
PSY	150	General Psychology	3	0	3
SOC	225	Social Diversity	3	0	3
			15	2	16
Fifth Semester (Spring)					
CJC	122	Community Policing *(or CJC 222)*	3	0	3
CJC	212	Ethics and Community Relations	3	0	3
CJC	215	Organization and Administration	3	0	3
COM	231	Public Speaking	3	0	3
MAT	115	Mathematical Models *(or MAT 161)*	2	2	3
			14	2	15
Program Totals			**70**	**10**	**75**

Students who have successfully completed a curriculum offering of Basic Law Enforcement Training within 10 years of their application to the Criminal Justice Technology Program will receive credit for CJC 121, 131, 132, 221, and 231.

This program is also offered in the evening schedule. See Evening Programs listing.

Dental Assisting

This curriculum prepares individuals to assist the dentist in the delivery of dental treatment and to function as integral members of the dental team while performing chairside and related office and laboratory procedures.

Course work includes instruction in general studies, biomedical sciences, dental sciences, clinical sciences, and clinical practice. A combination of lecture, laboratory, and clinical experiences provide students with knowledge in infection/hazard control, radiography, dental materials, preventive dentistry, and clinical procedures.

Graduates of this program may be eligible to take the Dental Assisting National Board Examination to become Certified Dental Assistants. As Dental Assistant II's, defined by the Dental Laws of North Carolina, graduates work in dental clinics/offices, and insurance companies.

Specific Entrance Requirements

1. General college admission requirements.
2. Acceptable reports of medical and dental examinations by first day of class.
3. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
4. Certification in Community CPR within three months of entering program.

Dental Assisting
Diploma

This program consists of:		Credit Hrs.
Major courses (DEN prefix)		37
Related and general education courses including:		11
English/Communications	3	
Natural Science/Mathematics	3	
Social Science	3	
Other	2	
PROGRAM TOTAL		48

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	106	Introduction to Anatomy/ Physiology/Microbiology	2	2	0	3
DEN	101	Preclinical Procedures	4	6	0	7
DEN	103	Dental Sciences	2	0	0	2
DEN	110	Orofacial Anatomy	2	2	0	3
DEN	111	Infection/Hazard Control	2	0	0	2
DEN	112	Dental Radiography	2	3	0	3
			14	13	0	20
Second Semester (Spring)						
DEN	102	Dental Materials	3	4	0	5
DEN	104	Dental Health Education	2	2	0	3
DEN	105	Practice Management	2	0	0	2
DEN	106	Clinical Practice I	1	0	12	5
			8	6	12	15
Third Semester (Summer)						
CIS	111	Basic PC Literacy	1	2	0	2
DEN	107	Clinical Practice II	1	0	12	5
ENG	102	Applied Communication II	3	0	0	3
PSY	150	General Psychology	3	0	0	3
			8	2	12	13
Program Totals			**30**	**21**	**24**	**48**

Dental Hygiene

This curriculum prepares individuals with the knowledge and skills to assess, plan, implement, and evaluate dental hygiene care for the individual and the community.

Students will learn to prepare the operatory, take patient histories, note abnormalities, plan care, teach oral hygiene, clean teeth, take x-rays, apply preventive agents, complete necessary chart entries, and perform other procedures related to dental hygiene care.

Graduates of this program may be eligible to take national and state/regional examinations for licensure which are required to practice dental hygiene. Employment opportunities include dental offices, clinics, schools, public health agencies, industry, and professional education.

Specific Entrance Requirements

1. General college admission requirements.
2. Have high school credit with grade of at least "C" for four units of English, two units of mathematics (one of which must be algebra), one unit of chemistry, and one unit of biology. Science oriented college preparatory courses are recommended.
3. Acceptable reports of medical and dental examinations by the first day of class.
4. Completion of required immunizations by first day of class, including first two doses of Hepatitis B vaccine.
5. Certification in Community CPR within three months of entering program.
6. The North Carolina Board of Dental Examiners may deny license to individuals convicted of a felony or any other crime involving moral turpitude.

Dental Hygiene
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (DEN prefix)		49
Related and general education courses including:		25
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	11	
Social Sciences	3	
Other	2	
PROGRAM TOTAL		74

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	168	Anatomy and Physiology I	3	3	0	4
DEN	110	Orofacial Anatomy	2	2	0	3
DEN	111	Infection/Hazard Control	2	0	0	2
DEN	112	Dental Radiography	2	3	0	3
DEN	120	Dental Hygiene Preclinic Lecture	2	0	0	2
DEN	121	Dental Hygiene Preclinic Laboratory	0	6	0	2
			11	14	0	16

Second Semester (Spring)						
BIO	169	Anatomy and Physiology II	3	3	0	4
DEN	124	Periodontology	2	0	0	2
DEN	125	Dental Office Emergencies	0	2	0	1
DEN	130	Dental Hygiene Theory I	2	0	0	2
DEN	131	Dental Hygiene Clinic I	0	0	9	3
DEN	222	General and Oral Pathology	2	0	0	2
ENG	111	Expository Writing	3	0	0	3
			12	5	9	17
Third Semester (Summer)						
BIO	175	General Microbiology	2	2	0	3
CIS	111	Basic PC Literacy	1	2	0	2
DEN	140	Dental Hygiene Theory II	1	0	0	1
DEN	141	Dental Hygiene Clinic II	0	0	6	2
DEN	223	Dental Pharmacology	2	0	0	2
			6	4	6	10
Fourth Semester (Fall)						
COM	231	Public Speaking	3	0	0	3
DEN	123	Nutrition/Dental Health	2	0	0	2
DEN	220	Dental Hygiene Theory III	2	0	0	2
DEN	221	Dental Hygiene Clinic III	0	0	12	4
DEN	224	Materials and Procedures	1	3	0	2
SOC	240	Social Psychology	3	0	0	3
			11	3	12	16
Fifth Semester (Spring)						
DEN	230	Dental Hygiene Theory IV	1	0	0	1
DEN	231	Dental Hygiene Clinic IV	0	0	12	4
DEN	232	Community Dental Health	2	0	3	3
DEN	233	Professional Development	2	0	0	2
DEN	292	Selected Topics in Dental Hygiene	2	0	0	2
HUM	115	Critical Thinking	3	0	0	3
			10	0	15	15
Program Totals			**50**	**26**	**42**	**74**

Early Childhood Associate

This curriculum prepares individuals to work with children from infancy through early childhood in diverse learning environments. Students will combine learned theories with practice in actual settings with young children under the supervision of qualified teachers.

Course work includes childhood growth and development, physical/nutritional needs of children, care and guidance of children, and communication skills with parents and children. Students will foster the cognitive/language, physical/motor, social/emotional and creative development of young children.

Graduates are prepared to plan and implement developmentally appropriate programs in early childhood settings. Employment opportunities include child development and child care programs, preschools, public and private schools, recreational centers, Head Start Programs, and school age programs.

Specific Entrance Requirements

1. General college admission requirements.
2. Acceptable reports of medical examination by the first day of class.
3. Three character/employment references by the first day of class.
4. According to GS 110-91, "No person shall be an operator of nor an employee in a day care facility who has been convicted of a crime involving child neglect, child abuse, or moral turpitude, or who is a habitually excessive user of alcohol or who illegally uses narcotics or other impairing drugs, or who is mentally retarded or mentally ill to an extent that may be injurious to children."

Early Childhood Associate
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (COE, EDU prefix)		48 (47)
Related and general education courses including:		26
English/Communication	9	
Humanities/Fine Arts	3	
Natural Science/Mathematics	4	
Social Sciences	6	
Other	4	
PROGRAM TOTAL		74 *(73)*

			Hrs. Per Week Class	Lab	Clinic	Credit Hrs.
First Semester (Fall)						
ACA	115	Freshman Seminar	0	2	0	1
CIS	110	Introduction to Computers	2	2	0	3
EDU	111	Early Childhood Credential I	2	0	0	2
EDU	112	Early Childhood Credential II (or EDU 113)	2	0	0	2
EDU	131	Child, Family, and Community	3	0	0	3
EDU	144	Child Development I	3	0	0	3
EDU	162	Early Experience/Prospective Teachers	1	2	0	2
		(or EDU 261)	*(2*	*0*	*0*	*2)*
ENG	111	Expository Writing	3	0	0	3
			16*(17)*	6	0	19
Second Semester (Spring)						
COE	111EC	Work Experience I	0	0	10	1
COE	115EC	Work Experience I Seminar	1	0	0	1
EDU	145	Child Development II	3	0	0	3
EDU	151	Creative Activities	3	0	0	3
EDU	151A	Creative Activities Lab	0	2	0	1
EDU	153	Health, Safety, and Nutrition	3	0	0	3
EDU	153A	Health, Safety, and Nutrition Lab	0	2	0	1
PSY	150	General Psychology	3	0	0	3
			13	4	10	16

Third Semester (Summer)						
BIO	143	Field Biology Minicourse	1	2	0	2
EDU	251	Exploration Activities	3	0	0	3
EDU	251A	Exploration Activities Lab	0	2	0	1
		Humanities Elective	3	0	0	3
			7	4	0	9
Fourth Semester (Fall)						
BIO	226	Local Flora Fall	1	2	0	2
COE	121E	Work Experience II	0	0	10	1
COE	125E	Work Experience II Seminar	1	0	0	1
EDU	146	Child Guidance	3	0	0	3
EDU	234	Infants/Toddlers/Two's	3	0	0	3
EDU	280	Literacy Experiences	3	0	0	3
		(or EDU 262)				
PSY	237	Social Psychology	3	0	0	3
			14	2	10	16
Fifth Semester (Spring)						
COE	131E	Work Experience III	0	0	10	1
COE	135E	Work Experience III Seminar	1	0	0	1
COM	231	Public Speaking	3	0	0	3
EDU	221	Special Needs	3	0	0	3
EDU	259	Curriculum Planning	3	0	0	3
		(or EDU 235)	*(2*	*0*	*0*	*2)*
ENG	114	Professional Research and Reporting	3	0	0	3
			13*(12)*	0	10	14*(13)*
Program Totals			**63*(64)***	**16**	**30**	**74*(73)***

Total credit hours required for certificate: 14.
Required courses for certificate program: EDU 111, EDU 112, EDU 144, EDU 146, EDU 151, and EDU 151A. *The certificate program is also offered in the evening schedule.*

Early Childhood Certificate

The Early Childhood Certificate program is designed to provide students minimum entry level skills to work with children from infancy through early childhood. Employment opportunities include child development and child care programs, preschools, public and private schools, recreational centers, Head Start programs, and school age programs.

Specific Entrance Requirements

1. General college admission requirements.
2. Three character/employee references by the first day of class.
3. According to GS 110-91, "No person shall be an operator of nor an employee in a day care facility who has been convicted of a crime involving child neglect, child abuse, or moral turpitude, or who is a habitually excessive user of alcohol or who illegally uses narcotics or other impairing drugs, or who is mentally retarded or mentally ill to an extent that may be injurious to children."

Early Childhood Certificate Program

This program consists of:	Credit Hrs.
Major courses (EDU)	14

		Hrs. Per Week Class	Lab	Clinic	Credit Hrs.
First Semester (Fall)					
EDU 111	Early Childhood Credential I	2	0	0	2
EDU 112	Early Childhood Credential II	2	0	0	2
EDU 144	Child Development I	3	0	0	3
EDU 146	Child Guidance	3	0	0	3
		10	0	0	10
Second Semester (Spring)					
EDU 153	Creative Activities	3	0	0	3
EDU 153A	Creative Activities Lab	0	2	0	1
		3	2	0	4
Program Totals		**13**	**2**	**0**	**14**

Emergency Medical Science

This curriculum is designed to prepare graduates to enter the workforce as paramedics. Additionally, the program can provide an Associate Degree for individuals desiring an opportunity for career enhancement.

The course of study provides the student an opportunity to acquire basic and advanced life support knowledge and skills by utilizing classroom instruction, practical laboratory sessions, hospital clinical experience, and field internships with emergency medical service agencies.

Students progressing through the program become eligible to apply for both state and national certification exams. Employment opportunities include ambulance services, fire and rescue agencies, air medical services, specialty areas of hospitals, industry, educational institutions, and government agencies.

Specific Entrance Requirements

1. General college admission requirements.
2. Must be 18 years of age at the end of the first semester of the program.
3. Current N.C. driver's license.
4. Acceptable reports of medical examinations and immunizations.

Emergency Medical Science
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (EMS prefix)		52
Related and general education courses including:		23
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	8	
Social Sciences	3	
Other	3	
PROGRAM TOTAL		75

		Hrs. Per Week			Credit
		Class	Lab	Clinic	Hrs.
First Semester (Fall)					
ACA 115	Freshman Seminar	0	2	0	1
BIO 168	Anatomy and Physiology I	3	3	0	4
CIS 111	Basic PC Literacy	1	2	0	2
EMS 110	EMT-Basic	4	6	0	6
EMS 111	Prehospital Environment	2	2	0	3
EMS 150	Vehicle Operations and EMS Communication	1	3	0	2
		11	18	0	18
Second Semester (Spring)					
BIO 169	Anatomy and Physiology II	3	3	0	4
EMS 120	Intermediate Interventions	2	3	0	3
EMS 121	EMS Clinical Practicum I	0	0	6	2
EMS 130	Pharmacology I for EMS	1	3	0	2
EMS 131	Advanced Airway Management	1	2	0	2
ENG 111	Expository Writing	3	0	0	3
		10	11	6	16
Third Semester (Summer)					
EMS 210	Advanced Patient Assessment	1	3	0	2
EMS 220	Cardiology	2	6	0	4
EMS 221	Clinical Practicum II	0	0	9	3
		3	9	9	9
Fourth Semester (Fall)					
EMS 140	Rescue Scene Management	1	6	0	3
EMS 231	Clinical Practicum III	0	0	9	3
EMS 250	Advanced Medical Emergencies	2	3	0	3
EMS 260	Advanced Trauma Emergencies	1	3	0	2
ENG 114	Professional Research and Reporting	3	0	0	3
SOC 225	Social Diversity	3	0	0	3
		10	12	9	17

Fifth Semester (Spring)

EMS	235	EMS Management	2	0	0	2
EMS	240	Special Needs Patients	1	3	0	2
EMS	241	Clinical Practicum IV	0	0	9	3
EMS	270	Life Span Emergencies	2	2	0	3
EMS	285	EMS Capstone	1	3	0	2
PHI	240	Introduction to Ethics	3	0	0	3
			9	8	9	15
		Program Totals	**43**	**58**	**33**	**75**

Emergency Medical Science Bridge Program

The Emergency Medical Science Bridge Program is designed to allow currently certified non-degree paramedics to earn an Associate in Applied Science (A.A.S.) degree in Emergency Medical Science. Paramedics enrolled in the bridge program must complete the EMS Bridge, Rescue Scene Management, EMS Management, Emergency Vehicles and EMS Communications, and EMS Capstone courses along with all related and general education course requirements for the EMS degree.

Specific Entrance Requirements

1. General college admission requirements.
    a. Complete application for admission.
    b. Successfully complete College Placement Test.
    c. High School transcript or GED scores on file with admissions office.
    d. Official transcript of any prior college credit on file with admissions office.
2. Possess current North Carolina driver's license.
3. Complete interview with EMS Department faculty.
4. At least 4,000 hours of patient contact at the paramedic level as evidenced by the signature of the director of the EMS agency with which the paramedic is affiliated and the medical director of the ALS system with which the paramedic is affiliated.
5. Current EMT-Paramedic certification.* (A copy of the paramedic education program transcript must be on file in the EMS Department.)
6. Current Basic Cardiac Life Support certification.*
7. Current Advanced Cardiac Life Support certification.*
8. Current Basic Trauma Life Support certification.*
9. Current Pediatric Advanced Life Support certification.*

* Copies of all current certifications must be on file in the EMS Department.

The above certifications and experience (4-9) will provide 40 hours of proficiency credit toward the A.A.S. degree and will count toward the A-B Tech residency requirement. These 40 hours represent the major area (EMS) courses required for EMT-Basic, EMT-Intermediate, and Paramedic certification that are not required as part of the EMS Bridge Program.

Emergency Medical Science Bridge Program
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (EMS prefix)		52
Related and general education courses including:		22
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	8	
Social Sciences	3	
Other	2	
PROGRAM TOTAL		74

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	168	Human Anatomy and Physiology I	3	3	0	4
CIS	111	Basic PC Literacy	1	2	0	2
EMS	140	Rescue Scene Management	1	6	0	3
EMS	150	Emergency Vehicles and EMS Communications	1	3	0	2
ENG	111	Expository Writing	3	0	0	3
			9	14	0	14
Second Semester (Spring)						
BIO	169	Human Anatomy and Physiology II	3	3	0	4
EMS	235	EMS Management	2	0	0	2
EMS	280	EMS Bridge Course	2	2	0	3
EMS	285	EMS Capstone	1	3	0	2
			8	8	0	11
Third Semester (Summer)						
ENG	114	Professional Research and Reporting	3	0	0	3
PHI	240	Introduction to Ethics	3	0	0	3
SOC	225	Social Diversity	3	0	0	3
			9	0	0	9
Program Totals			**26**	**22**	**0**	**34***

* At least 25% of required credit hours (19 credit hours) must be earned at A-B Tech.

Medical Laboratory Technology

This curriculum prepares individuals to perform clinical laboratory procedures in chemistry, hematology, microbiology, and immunohematology that may be used in the maintenance of health and diagnosis/treatment of disease.

Course work emphasizes mathematical and scientific concepts related to specimen collection, laboratory testing and procedures, quality assurance, and reporting/recording and interpreting findings involving tissues, blood, and body fluids.

Graduates may be eligible to take examinations given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists or the National Certifying Agency. Employment opportunities include laboratories in hospitals, medical offices, industry and research facilities.

Specific Entrance Requirements

1. General college admission requirements.
2. High School units:
   a. Algebra required. (Not required for CLA students.)
   b. Biology, chemistry, and geometry strongly recommended.
3. Three character references. (Not required for CLA students.)
4. Acceptable reports of medical examinations by first day of Practicum MLT 252. (Not required for CLA students.)
5. Completion of required immunizations including one dose of Hepatitis B vaccine. (Not required for CLA students.)
6. **CLA-MLT Transition:** Students who have CLA status and are entering the MLT program to earn the Associate in Applied Science Degree will be given credit for all MLT courses except MLT 210. These students must take all other courses in the program and meet the stated requirements for graduation.

Medical Laboratory Technology
Associate in Applied Science Degree

		Credit Hrs.
Major courses (BIO, CHM, MLT prefix)		56
Related and general education courses including:		20
English/Communications	9	
Humanities/Fine Arts	3	
Natural Science/Mathematics	3	
Social Sciences	3	
Other	2	
PROGRAM TOTAL		76

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
CHM	130	General, Organic and Biochemistry	3	0	0	3
CHM	130A	General, Organic and Biochemistry Lab	0	2	0	1
ENG	111	Expository Writing	3	0	0	3
MLT	110	Introduction to MLT	2	3	0	3
MLT	140	Introduction to Microbiology	2	3	0	3
			14	10	0	18

Second Semester (Spring)					
MLT 120	Hematology/Hemostasis	3	3	0	4
MLT 126	Immunology and Serology	1	2	0	2
MLT 130	Clinical Chemistry	3	3	0	4
MLT 240	Special Clinical Microbiology	2	3	0	3
PHI 240	Introduction to Ethics	3	0	0	3
		12	11	0	16
Third Semester (Summer)					
MAT 151	Statistics I	3	0	0	3
MLT 111	Urinalysis and Body Fluids	1	3	0	2
MLT 127	Transfusion Medicine	2	3	0	3
MLT 252	MLT Practicum I	0	0	6	2
		6	6	6	10
Fourth Semester (Fall)					
CIS 111	Basic PC Literacy	1	2	0	2
COM 231	Public Speaking	3	0	0	3
MLT 254	MLT Practicum I (or MLT 210)	0	0	12	4
MLT 255	MLT Practicum I	0	0	15	5
MLT 261	MLT Practicum II	0	0	3	1
		4	2	30	15
Fifth Semester (Spring)					
ENG 114	Professional Research and Reporting	3	0	0	3
MLT 215	Professional Issues	1	0	0	1
MLT 265	MLT Practicum II	0	0	15	5
MLT 275	MLT Practicum III	0	0	15	5
PSY 150	General Psychology	3	0	0	3
		7	0	30	17
Program Totals		**43**	**29**	**66**	**76**

Medical Sonography

The medical sonography curriculum provides knowledge and clinical skills in the application of high frequency sound waves to image internal body structures.

Course work includes physics, cross-sectional anatomy, abdominal, introductory vascular, and obstetrical/gynecological sonography. Competencies are attained in identification of normal anatomy and pathological processes, use of equipment, fetal growth and development, integration of related imaging, and patient interaction skills.

Graduates of accredited programs may be eligible to take examinations in ultrasound physics and instrumentation and specialty examinations administered by the American Registry of Diagnostic Medical Sonographers and find employment in clinics, physicians' offices, mobile services, hospitals, and educational institutions.

Specific Entrance Requirements

1. General college admission requirements.
2. High school biology and one unit of high school algebra.
3. Keyboarding skills are highly recommended.
4. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes.
5. Either first dose of Hepatitis B vaccine or completion of series.

6. Documentation of current CPR certification for the professional rescuer, which must be kept current throughout the length of the program.
7. Completion of an observation in an approved sonography area. Details are available in the Admissions Office.
8. Completion of all requirements for sonography published in the current admissions criteria, which is available in the Admissions Office.

Medical Sonography
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (SON prefix)		54
Related and general education courses including:		22
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	7	
Social Science	3	
Other	3	
PROGRAM TOTAL		76

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
ENG	111	Expository Writing	3	0	0	3
PHY	125	Health Sciences Physics	3	2	0	4
SON	110	Intro to Sonography	1	3	3	3
SON	130	Abdominal Sonography I	2	3	0	3
			13	10	3	18
Second Semester (Spring)						
MAT	115	Mathematical Models	2	2	0	3
SON	111	Sonographic Physics	3	3	0	4
SON	120	SON Clinical Ed I	0	0	15	5
SON	131	Abdominal Sonography II	1	3	0	2
SON	140	Gynecological Sonography	2	0	0	2
			8	8	15	16
Third Semester (Summer)						
SON	121	SON Clinical Ed II	0	0	15	5
SON	241	Obstetrical Sonography I	2	0	0	2
			2	0	15	7
Fourth Semester (Fall)						
CIS	110	Introduction to Computers	2	2	0	3
COM	231	Public Speaking	3	0	0	3
SON	220	SON Clinical Ed III	0	0	24	8
SON	225	Case Studies	0	3	0	1
SON	242	Obstetrical Sonography II	2	0	0	2
			7	5	24	17

Fifth Semester (Spring)

SON	221	SON Clinical Ed IV	0	0	24	8
SON	250	Vascular Sonography	1	3	0	2
SON	289	Sonographic Topics	2	0	0	2
		Humanities Elective	3	0	0	3
		Social Science Elective	3	0	0	3
			9	3	24	18
Program Totals			**39**	**26**	**81**	**76**

Total credit hours required for degree: 76.
Total credit hours required for diploma: 48.
Required courses for diploma: BIO 163, ENG 111, MAT 115, SON 110, SON 111, SON 120, SON 121, SON 130, SON 131, SON 140, SON 220, SON 241, and SON 242.

Phlebotomy

This curriculum prepares individuals to obtain blood and other specimens for the purpose of laboratory analysis. Course work includes proper specimen collection and handling, communication skills and maintaining patient data.

Graduates may qualify for employment in hospitals, clinics, physician's offices, and other health care settings, and may be eligible to test for national certification as phlebotomy technicians.

Specific Entrance Requirements

1. General college admission requirements.
    a. Application
    b. High school transcript
    c. Acceptable reading score on placement test
2. Acceptable reports of medical examinations by first day of class.
3. Completion of required immunizations including one dose of Hepatitis B vaccine.

Phlebotomy Certificate

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
Program offered Fall or Spring						
PBT	100	Phlebotomy Technology	5	2	0	6
PBT	101	Phlebotomy Practicum	0	0	9	3
PSY	118	Interpersonal Psychology	3	0	0	3
Program Totals			**8**	**2**	**9**	**12**

Practical Nursing

This curriculum prepares individuals with the knowledge and skills to provide nursing care to children and adults. Students will participate in assessment, planning, implementing, and evaluating nursing care.

Graduates of this program are eligible to apply to take the National Council Licensure Examination (NCLEX-PN) which is required for practice as a Practical Nurse. Employment opportunities include hospitals, rehabilitation facilities, long term care facilities, clinics, physician's offices, and home health agencies.

Admission Requirements

1. Final admission to the Practical Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.

Practical Nursing
Diploma

This program consists of:		Credit Hrs.
Major courses (BIO, NUR prefix)		41
Related and general education courses including:		6
English/Communications	3	
Other	3	
PROGRAM TOTAL		47

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
NUR	101	Practical Nursing I	7	6	6	11
PSY	110	Life Span Development	3	0	0	3
			14	8	6	19
Second Semester (Spring)						
CIS	110	Introduction to Computers	2	2	0	3
ENG	102	Applied Communications II	3	0	0	3
NUR	102	Practical Nursing II	8	0	12	12
			13	2	12	18
Third Semester (Summer)						
NUR	103	Practical Nursing III	6	0	12	10
			6	0	12	10
Program Totals			**33**	**10**	**30**	**47**

Practical Nursing/Associate Degree Nursing Bridge Program

Admission Requirements

1. Final admission to the Associate Degree Nursing program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe nursing care to the public.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.

This program consists of:		Credit Hrs.
Major courses (BIO, NUR prefix)		52
Related and general education courses including:		23
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	8	
Social Sciences	3	
Other	3	
PROGRAM TOTAL		75*

		Hrs. Per Week			Credit
		Class	Lab	Clinic	Hrs.
Second Semester (Spring)					
NUR 133	Nursing Assessment	2	3	0	3
NUR 189	Nursing Transition	1	3	0	2
SOC 215	Group Processes	3	0	0	3
	Humanities Elective	3	0	0	3
		9	6	0	11
Third Semester (Summer)					
NUR 185	Mental Health Nursing	3	0	6	5
NUR 188	Nursing in the Community	1	0	6	3
		4	0	12	8
Fourth Semester (Fall)					
ENG 114	Professional Research and Reporting	3	0	0	3
NUR 125	Maternal-Child Nursing	5	3	6	8
NUR 255	Professional Issues	3	0	0	3
		11	3	6	14
Fifth Semester (Spring)					
NUR 116	Nursing of Older Adults	2	3	3	4
NUR 235	Adult Nursing II	4	3	15	10
		6	6	18	14
Program Totals		**30**	**15**	**36**	**47***

Licensed Practical Nurses in the bridge program will receive credit for NUR 115 Fundamentals of Nursing, NUR 117 Pharmacology, and NUR 135 Adult Nursing I upon successful completion of NUR 189 Nursing Transition. Licensed Practical Nurses

in the Bridge Program must complete all general education courses required in the generic Associate Degree Nursing program prior to application deadline. These courses include: BIO 168, BIO 169, CIS 110, and ENG 111.

*Licensed Practical Nurses completing BIO 168, BIO 169, CIS 110, and ENG 111 and receiving credit for NUR 115, NUR 117, and NUR 135 must complete the additional 47 credit hours listed to receive the Associate in Applied Science degree in nursing.

Radiography

The Radiography curriculum prepares the graduate to be a radiographer, a skilled health care professional who uses radiation to produce images of the human body.

Course work includes clinical rotations to area health care facilities, radiographic exposure, image processing, radiographic procedures, physics, pathology, patient care and management, radiation protection, quality assurance, anatomy and physiology, and radiobiology.

Graduates of accredited programs are eligible to apply to take the American Registry of Radiologic Technologists national examination for certification and registration as medical radiographers. Graduates may be employed in hospitals, clinics, physicians' offices, medical laboratories, government agencies, and industry.

Specific Entrance Requirements

1. General college admission requirements.
2. High school biology and one unit of high school algebra.
3. Keyboarding skills are highly recommended.
4. Satisfactory completion of medical examination and reports of immunization within 90 days before beginning major area classes.
5. Either first dose of Hepatitis B vaccine or completion of series.
6. Documentation of current CPR certification for the Professional Rescuer which must be kept current throughout the length of the program.
7. Completion of a 12-hour observation in the radiology department at one of the clinical affiliates. Details are available in the Admissions Office.
8. Completion of all requirements for radiography published in the current admissions criteria for Radiography which is available in the admissions office.

Notice

Candidates for certification from the American Registry of Radiologic Technologists (ARRT) must comply with the "Rules of Ethics" contained in the *ARRT Standards of Ethics.* Any conviction of a crime, including a felony, a gross misdemeanor, or a misdemeanor with the sole exception of speeding and parking violations must be investigated by the ARRT in order to determine eligibility for the certification examination. Additional information may be obtained from the department chairperson.

Radiography students will be required to complete clinical rotations which may require them to travel as much as one hour from campus. Clinical affiliates are currently located in Asheville, Hendersonville, Fletcher, Brevard, and Marion. All radiography students will complete a four to eight week rotation during the late afternoon-early evening hours (3:30 - 10 p.m.) at some time during their clinic education.

Radiography
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (RAD prefix)		53
Related and general education courses including:		23
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	5	
Social Sciences	3	
Other	6	
PROGRAM TOTAL		76

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
ENG	111	Expository Writing	3	0	0	3
RAD	110	Radiography Introduction and Patient Care	2	3	0	3
RAD	111	RAD Procedures I	3	3	0	4
RAD	151	RAD Clinical Education I	0	0	6	2
RAD	182	RAD Clinical Elective	0	0	6	2
			12	8	12	19
Second Semester (Spring)						
CIS	110	Introduction to Computers	2	2	0	3
COM	231	Public Speaking	3	0	0	3
RAD	112	RAD Procedures II	3	3	0	4
RAD	121	Radiographic Imaging I	2	3	0	3
RAD	161	RAD Clinical Education II	0	0	15	5
			10	8	15	18
Third Semester (Summer)						
RAD	122	Radiographic Imaging II	1	3	0	2
RAD	131	Radiographic Physics I	1	3	0	2
RAD	171	RAD Clinical Education III	0	0	12	4
			2	6	12	8
Fourth Semester (Fall)						
PSY	118	Interpersonal Psychology	3	0	0	3
RAD	211	RAD Procedures III	2	3	0	3
RAD	231	Radiographic Physics II	1	3	0	2
RAD	241	Radiation Protection	2	0	0	2
RAD	251	RAD Clinical Education IV	0	0	21	7
			8	6	21	17

Fifth Semester (Spring)

PHI	240	Introduction to Ethics	3	0	0	3
RAD	245	Radiographic Analysis	2	3	0	3
RAD	261	RAD Clinical Education V	0	0	21	7
RAD	291	Selected Topics in Radiography	0	3	0	1
			5	6	21	14
		Program Totals	**37**	**34**	**81**	**76**

Social Services

The Human Services Technology/Social Services concentration prepares students for direct service delivery work in social service agencies. The curriculum enables students to link theory and practice through interactive classroom activities developing a skill-based academic foundation.

Course work includes the history of the social service movement, ethical issues, case management, diversity issues, law in the practice of social work, and community resources. Students also gain skills in interviewing and counseling techniques.

Graduates should qualify for employment with local, county, state, and federal government social service agencies. Employment includes family and child assistance, rehabilitation health services, medical assistance, youth services, aging, and developmentally disabled programs in public and private settings.

Specific Entrance Requirements

1. General college admission requirements.
2. Acceptable reports of medical examinations and immunizations by the end of the first semester of enrollment in the Social Services program.
3. Three character/employment references by the end of the first semester of enrollment in this program.

Human Services Technology — Social Services Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (COE, DDT, HSE, SAB, SWK prefix)		53
Related and general education courses including:		19
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
Other	4	
PROGRAM TOTAL		72

			Hrs. Per Week			Credit
			Class	Lab	Work	Hrs.
First Semester (Fall)						
ACA	115	Freshman Seminar	0	2	0	1
CIS	110	Introduction to Computers	2	2	0	3
ENG	111	Expository Writing	3	0	0	3
HSE	110	Introduction to Human Services	2	2	0	3
HSE	112	Group Process I	1	2	0	2
PSY	150	General Psychology	3	0	0	3
			11	8	0	15
Second Semester (Spring)						
HSE	123	Interview Techniques	2	2	0	3
HSE	220	Case Management	2	2	0	3
MAT	115	Mathematical Models	2	2	0	3
SOC	210	Introduction to Sociology	3	0	0	3
SWK	110	Introduction to Social Work	3	0	0	3
			12	6	0	15
Third Semester (Summer)						
ENG	114	Professional Research and Reporting	3	0	0	3
HSE	225	Crisis Intervention	3	0	0	3
HUM	115	Critical Thinking	3	0	0	3
PSY	281	Abnormal Psychology	3	0	0	3
SWK	115	Community Resources	2	2	0	3
			14	2	0	15
Fourth Semester (Fall)						
COE	111SS	Co-op Work Experience I	0	0	10	1
COE	115SS	Work Experience Seminar I	1	0	0	1
HSE	125	Counseling	2	2	0	3
SOC	213	Sociology of the Family	3	0	0	3
SWK	113	Working with Diversity	3	0	0	3
SWK	214	Social Work Law	3	0	0	3
			12	2	10	14
Fifth Semester (Spring)						
COE	121SS	Co-op Work Experience II	0	0	10	1
COE	125SS	Work Experience Seminar II	1	0	0	1
DDT	110	Developmental Disabilities	3	0	0	3
HSE	210	Human Services Issues	2	0	0	2
SAB	110	Substance Abuse Overview	3	0	0	3
SWK	220	Social Work in Client Services	3	0	0	3
			12	0	10	13
Program Totals			**61**	**18**	**20**	**72**

This program is also offered in the evening schedule. See Evening Programs listing.

Surgical Technology*

This curriculum prepares individuals to assist in the care of the surgical patient in the operating room and to function as a member of the surgical team.

Students will apply theoretical knowledge to the care of patients undergoing surgery and develop skills necessary to prepare supplies, equipment, and instruments; maintain aseptic conditions; prepare patients for surgery; and assist surgeons during operations.

Graduates of this program will be eligible to apply to take the Liaison Council's Certification Examination for Surgical Technologists. Employment opportunities include labor/delivery/emergency departments, inpatient/outpatient surgery centers, dialysis units/facilities, physicians' offices, and central supply processing units.

Specific Entrance Requirements

1. Final admission to the Surgical Technology program shall be contingent upon documentation of physical and emotional health that would provide evidence that is indicative of the applicant's ability to provide safe care to the public.
2. Satisfactory completion of required immunizations.
3. Current CPR for the Professional Rescuer certification is a prerequisite to admission and must be maintained throughout the program.

*Pending NCCCS State Board Approval

Surgical Technology
Diploma

This program consists of:		Credit Hrs.
Major courses (BIO, SUR)		41
Related and general education courses including:		6
English/Communications	3	
Humanities/Fine Arts	0	
Natural Science/Mathematics	3	
Social Sciences	0	
Other	0	
PROGRAM TOTAL		47

			Hrs. Per Week			Credit
			Class	Lab	Clinic	Hrs.
First Semester (Fall)						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
ENG	111	Expository Writing	3	0	0	3
MAT	110	Mathematical Measurements	2	2	0	3
SUR	110	Introduction to Surgical Technology	3	0	0	3
SUR	111	Perioperative Patient Care	5	6	0	7
			17	10	0	21

Second Semester (Spring)						
BIO	175	General Microbiology	2	2	0	3
SUR	122	Surgical Procedures I	5	3	0	6
SUR	123	Surgical Clinical I	0	0	21	7
			7	5	21	16
Third Semester (Summer)						
SUR	134	Surgical Procedures II	5	0	0	5
SUR	135	Surgical Clinical II	0	0	12	4
SUR	137	Professional Success Preparation	1	0	0	1
			6	0	12	10
Program Totals			**30**	**15**	**33**	**47**

Business & Hospitality



BUSINESS AND HOSPITALITY EDUCATION

	Accounting*	Business Administration*	Computer Programming
Recommended High School Courses	Keyboarding Accounting English Business electives Algebra	Keyboarding Accounting Plus any other Business electives	Keyboarding Computer Applications Algebra English
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall. Can take single courses any semester.	Day/Night Begins Fall. Can take single courses any semester.	Day/Night. Begins Fall. Night begins in even years only. Can take single courses any semester.
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Accountant Estimator Bookkeeper I	Purchasing Agent Sales Manager General Supervisor Operations Officer Loan Officer Office Manager	Computer Operator Programmer Software Developer

**Tech Prep agreements with regional high schools.*

BUSINESS AND HOSPITALITY EDUCATION

	Culinary Technology	Health Information Technology**	Hotel and Restaurant Management*
Recommended High School Courses	Computer Applications Keyboarding Algebra English Nutrition Food Services	Anatomy/Physiology Health Occupations Courses Keyboarding Computer Applications	Computer Applications Keyboarding Algebra Oral Communication English Food Services Accounting Marketing
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Competitive selection after acceptable scores on Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall. Can take single courses any semester.	Day Begins Fall.	Day Begins Fall. Can take single courses any semester.
Degree	Associate in Applied Science	Associate in Applied Science or Diploma	Associate in Applied Science
Employment Opportunities	Saute Chef Grill Chef Gardemanger Chef Soup/Sauce Chef Kitchen Manager Catering/Banquet Mgr. Dining Room Manager Food/Beverage Mgr. Purchasing Agent Steward Food, Beverage and Equipment Purveyor	Hospitals Long Term Care Facilities Clinics Physicians' Offices Community Health Agencies Insurance Industry	Catering Manager Management Trainee Restaurant Mgr. Director of Food Services Reservations Mgr. Front Office Mgr. Country Club Mgr. Food/Beverage Mgr.

**Tech Prep agreements with regional high schools.*
***Pending NCCCS State Board Approval*

BUSINESS AND HOSPITALITY EDUCATION

	Information Systems	Marketing and Retailing*	Medical Office Administration
Recommended High School Courses	Keyboarding Computer Applications Algebra English	Keyboarding Accounting Plus any other Business electives	Advanced Keyboarding Computer Applications Courses in Health Occupations Anatomy/Physiology
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night. Begins Fall. Night begins in even years only. Can take single courses any semester.	Day/Night Begins Fall. Can take single courses any semester.	Day/Night Begins Fall. Night begins even years only. Can take single courses any semester.
Degree	Associate in Applied Science	Associate in Applied Science	Diploma
Employment Opportunities	PC Support Network Support Computer Trainer	Assistant Mgr. Department Mgr. Sales Rep. Salesperson Retail Buyer	Medical Office Administration in: Medical and Dental Offices Hospitals Insurance Companies

**Tech Prep agreements with regional high schools.*

BUSINESS AND HOSPITALITY EDUCATION

	Medical Transcription	Networking Technology
Recommended High School Courses	Advanced Keyboarding Computer Applications Courses in Health Occupations Anatomy/Physiology	Keyboarding Computer Applications Algebra English
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall. Night begins even years only. Can take single courses any semester.	Day/Night. Begins Fall. Night begins in even years only. Can take single courses any semester.
Degree	Diploma	Associate in Applied Science
Employment Opportunities	Medical Transcriptionist in: Medical Office, Critical Care Facility, or for Transcription Service Provider	Network: Managers Operators Analysts Technicians

BUSINESS AND HOSPITALITY EDUCATION

	Office Systems Technology*	Operations Management
Recommended High School Courses	Keyboarding Computer Applications Accounting Plus any other Business electives	Keyboarding Accounting Algebra Plus any other Business electives
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall. Can take single courses any semester.	Night Begins Fall. Can take single courses any semester.
Degree	Associate in Applied Science or Diploma	Associate in Applied Science
Employment Opportunities	Administrative Asst. Office Manager Word Processor Info. Processing Specialist Administrative Support	Front Line Supervision Team Leadership Operations Planning Quality Assurance Manufacturing Management

**Tech Prep agreements with regional high schools.*

Business and Hospitality Education

The Business and Hospitality Education Division provides technical postsecondary education in the academic departments of Hospitality Education, Business Administration and Computer Technologies. Programs of study are specifically designed to provide students with necessary job skills to meet the personnel needs of local employers. All programs emphasize the mastery of analytical and technology-related skills. Business and Hospitality faculty work in partnership with local employers and program advisory committees to provide students with an appropriate foundation of theoretical and hands-on experiences. Day and evening classes are available for most programs. The Business and Hospitality Education Division is an associate member of the National Alliance of Business.

Objectives of Business and Hospitality Programs

1. To provide students with the necessary skills to compete in local business or hospitality job markets while gaining an appreciation for global markets.
2. To provide students with a challenging and rigorous program of study emphasizing oral and written communication skills along with analytical, computational, and technical proficiencies.
3. To provide an interactive partnership between students, employers and faculty through a variety of methods including cooperative work experiences, guest lecturers, field trips, and advisory committee input.
4. To invest in the human capital of Buncombe and Madison counties and contribute to the economic development of the business and hospitality community.

A.A.S. Degrees Conferred

Accounting
Business Administration
Computer Programming
Culinary Technology
* Health Information Technology
Hotel and Restaurant Management
Information Systems
Marketing and Retailing
Networking Technology
Office Systems Technology
Operations Management

* Pending NCCCS State Board approval

All degree programs in the Division of Business and Hospitality Education are five semesters in duration and will require from 20 to 30 hours per week of course work. If a student elects to enroll in the Business and Hospitality Division through the evening program, the time required for completion will be extended.

Diplomas Awarded

Medical Office Administration
Medical Transcription
Office Systems Technology

Certificates Awarded

Accounting
Baking and Pastry
Cisco Academy
Customer Service
Hospitality Management
Medical Coding
Microcomputer Applications
Networking
PC Installation and Maintenance
Quality Technology
Real Estate
Real Estate Appraisal
Word Processing and Desktop Publishing

Accounting

The Accounting curriculum is designed to provide students with the knowledge and the skills necessary for employment and growth in the accounting profession. Using the "language of business," accountants assemble and analyze, process, and communicate essential information about financial operations.

In addition to course work in accounting principles, theories, and practice, students will study business law, finance, management, and economics. Related skills are developed through the study of communications, computer applications, financial analysis, critical thinking skills, and ethics.

Graduates should qualify for entry-level accounting positions in many types of organizations including accounting firms, small businesses, manufacturing firms, banks, hospitals, school systems, and governmental agencies. With work experience and additional education, an individual may advance in the accounting profession.

Accounting
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (ACC, BUS, ECO, MKT prefix)		57
Related and general education courses including:		19
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Other	7	
PROGRAM TOTAL		76

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
ACC	120	Principles of Accounting I	3	2	4
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
MAT	115	Mathematical Models	2	2	3
			10	8	14
Second Semester (Spring)					
ACC	121	Principles of Accounting II	3	2	4
BUS	137	Principles of Management	3	0	3
CIS	120	Spreadsheet I	2	2	3
MKT	120	Principles of Marketing	3	0	3
		Humanities Elective	3	0	3
			14	4	16
Third Semester (Summer)					
ACC	125	Mathematics of Finance	3	0	3
ACC	150	Computerized General Ledger	1	2	2
BUS	115	Business Law I	3	0	3
COM	231	Public Speaking	3	0	3
ECO	251	Principles of Microeconomics	3	0	3
			13	2	14

Fourth Semester (Fall)				
ACC 129	Individual Income Taxes	2	2	3
ACC 220	Intermediate Accounting I	3	2	4
ACC 225	Cost Accounting	3	0	3
BUS 225	Business Finance	2	2	3
ECO 252	Principles of Macroeconomics	3	0	3
		13	6	16
Fifth Semester (Spring)				
ACC 130	Business Income Taxes	2	2	3
ACC 221	Intermediate Accounting II	3	2	4
ACC 240	Government and Not-for-Profit Accounting	3	0	3
ACC 269	Auditing	3	0	3
BUS 147	Business Insurance	3	0	3
		14	4	16
	Program Totals	**64**	**24**	**76**

This program is also offered in the evening schedule. See Evening Programs listing.

Accounting Certificate

There are two levels of Accounting Certificates. Level I provides introductory training in the field of accounting, while Level II takes students to an advanced level including the specialized area of government and not-for-profit accounting. Applicants must have earned a high school diploma or GED to apply for these certificates.

Level I		**Hrs. Per Week Class**	**Lab**	**Credit Hrs.**
First Semester (Fall)				
ACC 120	Principles of Accounting I	3	2	4
Second Semester (Spring)				
ACC 121	Principles of Accounting II	3	2	4
Third Semester (Summer)				
BUS 115	Business Law I	3	0	3
Fourth Semester (Fall)				
ACC 225	Cost Accounting	3	0	3
	Program Totals	**12**	**4**	**14**

Level II			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACC	129	Individual Income Taxes	2	2	3
ACC	220	Intermediate Accounting I	3	2	4
			5	4	7
Second Semester (Spring)					
ACC	221	Intermediate Accounting II	3	2	4
ACC	240	Government and Not-for-Profit Accounting	3	0	3
			6	2	7
	Program Totals		**11**	**6**	**14**

Baking and Pastry Arts

Certificate
(Offered Day Only)

The Baking and Pastry Arts Certificate program prepares graduates for employment in individual pastry and bake shops or in the bakery production departments of healthcare institutions, wholesale/retail markets, hotels, resorts, restaurants or catering businesses.

Level 1 Certificate

			Hrs. Per Week Class	Lab	Credit Hrs.
CUL	110	Sanitation and Safety	2	0	2
CUL	110A	Sanitation and Safety Lab	0	2	1
CUL	150	Food Science	1	2	2
CUL	160	Baking I	1	4	3
CUL	180	International and American Regional Cuisine	1	8	5
	Certificate Total		**5**	**16**	**13**

Level II Certificate

			Hrs. Per Week Class	Lab	Work	Credit Hrs.
CUL	120	Purchasing	2	0	0	2
CUL	260	Baking II	1	4	0	3
CUL	280	Pastry and Confections	1	4	0	3
HRM	145	Hospitality Supervision	3	0	0	3
HRM	220	Food and Beverage Control	3	0	0	3
COE	112CU	Co-op Work Experience	0	0	20	2
	Certificate Total		**10**	**8**	**20**	**16**

Business Administration

The Business Administration curriculum is designed to introduce students to the various aspects of the free enterprise system. Students will be provided with a fundamental knowledge of business functions, processes, and an understanding of business organizations in today's global economy.

Course work includes business concepts such as accounting, business law, economics, management, and marketing. Skills related to the application of these concepts are developed through the study of computer applications, communication, team building, and decision making.

Through these skills, students will have a sound business education base for lifelong learning. Graduates are prepared for employment opportunities in government agencies, financial institutions, and large to small business or industry.

Business Administration
Associate in Applied Science

This program consists of:		Credit Hrs.
Major courses (ACC, BUS, ECO, ISC, MKT prefix)		55
Related and general education courses including:		21
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Other	9	
PROGRAM TOTAL		76

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
ACC	120	Principles of Accounting I	3	2	4
BUS	110	Introduction to Business	3	0	3
CIS	110	Introduction to Computers	2	2	3
MAT	115	Mathematical Models	2	2	3
			10	8	14
Second Semester (Spring)					
ACC	121	Principles of Accounting II	3	2	4
BUS	137	Principles of Management	3	0	3
ENG	111	Expository Writing	3	0	3
MKT	120	Principles of Marketing	3	0	3
OST	136	Word Processing	1	2	2
			13	4	15
Third Semester (Summer)					
ACC	125	Mathematics of Finance	3	0	3
BUS	115	Business Law I	3	0	3
ECO	251	Principles of Microeconomics	3	0	3
		Humanities Elective	3	0	3
		Related Elective*	3	0	3
			15	0	15

Fourth Semester (Fall)

ACC	129	Individual Income Taxes	2	2	3
BUS	135	Principles of Supervision	3	0	3
BUS	225	Business Finance	2	2	3
CIS	120	Spreadsheet I	2	2	3
ECO	252	Principles of Macroeconomics	3	0	3
			12	6	15

Fifth Semester (Spring)

BUS	147	Business Insurance	3	0	3
BUS	230	Small Business Management	3	0	3
BUS	239	Business Applications Seminar	1	2	2
COM	231	Public Speaking	3	0	3
		Related Electives*	6	0	6
			16	2	17
		Program Totals	**66**	**20**	**76**

*Related Electives: ACC 225, BUS 116, BUS 153, BUS 240, BUS 260, BUS 270, ISC 131, MKT 121, MKT 123, MKT 220, MKT 221, MKT 223, MKT 224.

This program is also offered in the evening schedule. See Evening Programs listing.

Cisco Certified Network Associate

This certificate is designed to prepare students for the Cisco Certified Network Association (CCNA) examination. Topics include network topologies and design, router configuration and protocols, switching theory, virtual LANS and threaded case studies. Upon completion of the four course sequence, students will have the experience they need to pass the test required to achieve CCNA status. Prerequisites to enter the program are successful completion of NET 110 or permission of department. Satisfactory score on a placement examination may also be required.

			Hrs. Per Week Class	Lab	Credit Hrs.
NET	125	Routing and Switching I	1	4	3
NET	126	Routing and Switching II	1	4	3
NET	225	Advanced Routing and Switching I	1	4	3
NET	226	Advanced Routing and Switching II	1	4	3
			4	16	12

Computer Programming

This curriculum prepares individuals for employment as computer programmers and related positions through study and applications in computer concepts, logic, programming procedures, languages, generators, operating systems, networking, data management, and business operations.

Students will solve business computer problems through programming techniques and procedures, using appropriate languages and software. The primary emphasis of the curriculum is hands-on training in programming and related computer areas that provide the ability to adapt as systems evolve.

Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer/analysts, software developers, computer operators, systems technicians, database specialists, computer specialists, software specialists, or information systems managers.

Computer Programming
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (CIS, COE, CSC, NET prefix)		57
Related and general education courses including:		19
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
Other	4	
PROGRAM TOTAL		76

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACC	120	Principles of Accounting I	3	2	4
CIS	110	Introduction to Computers	2	2	3
CIS	115	Introduction to Programming and Logic	2	2	3
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I	2	2	3
			12	8	16
Second Semester (Spring)					
CIS	130	Survey of Operating Systems	2	3	3
CIS	152	Database Concepts and Applications	2	2	3
CSC	139	Visual BASIC Programming	2	3	3
NET	110	Data Communications and Networking	2	2	3
		Humanities Elective	3	0	3
			11	10	15
Third Semester (Summer)					
CIS	145	Operating System-Single User	2	2	3
CIS	155	Database Theory/Analysis	2	2	3
CSC	239	Advanced Visual BASIC	2	3	3
COM	231	Public Speaking	3	0	3
ITN	160	Principles of Web Design	2	2	3
			11	9	15
Fourth Semester (Fall)					
CIS	157	Database Programming I	2	2	3
CIS	163	Programming Interfaces Internet	2	2	3
CIS	215	Hardware Installation and Maintenance	2	3	3
CIS	286	Systems Analysis and Design	3	0	3
CSC	141	Visual C++ Programming	2	3	3
			11	10	15

Fifth Semester (Spring)

CSC	241	Advanced Visual C++	2	3	3
CSC	293	Selected Topics in Computer Programming	1	4	3
ITN	170	Introduction to Internet Database	2	2	3
		Major Elective*	2	3	3
		Social/Behavioral Sciences Elective	3	0	3
			10	12	15
	Program Totals		**55**	**49**	**76**

*The hour totals include a minimum of three credit hours of major electives to be selected from CIS 125, CIS 170, CIS 236, COE 212IS, COE 215IS, NET 120, NET 125, NET 145, NET 260.

This program is also offered in the evening schedule. See Evening Programs listing.

Culinary Technology

The Culinary Technology curriculum provides specific training required to prepare students to assume positions as trained culinary professionals in a variety of food service settings including full service restaurants, hotels, resorts, clubs, catering operations, contract food service, and health care facilities.

Course offerings emphasizing practical application, a strong theoretical knowledge base, and professionalism provide the critical competencies to successfully meet industry demands. Courses include sanitation, food/beverage service and control, baking, gardemanger, American/international cuisines, food production, and hospitality supervision.

Graduates should qualify for entry-level positions, such as line cook, station chef, and assistant pastry chef. American Culinary Federation certification is available to graduates. With experience, graduates may advance to positions such as sous chef, executive chef, or food service manager.

Culinary Technology
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (COE, CUL, and HRM prefix)		58
Related and general education courses including:		18
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
Other	3	
PROGRAM TOTAL		76

		Hrs. Per Week			Credit
		Class	Lab	Work	Hrs.
First Semester (Fall)					
CIS 110	Introduction to Computers	2	2	0	3
CUL 110	Sanitation and Safety	2	0	0	2
CUL 110A	Sanitation and Safety Lab	0	2	0	1
CUL 140	Basic Culinary Skills	2	6	0	5
CUL 150	Food Science	1	2	0	2
ENG 111	Expository Writing	3	0	0	3
MAT 115	Mathematical Models	2	2	0	3
		12	14	0	19
Second Semester (Spring)					
CUL 120	Purchasing	2	0	0	2
CUL 160	Baking I	1	4	0	3
CUL 170	Gardemanger I	1	4	0	3
CUL 240	Advanced Culinary Skills	1	8	0	5
CUL 240A	Advanced Culinary Skills Lab	0	3	0	1
HRM 220	Food and Beverage Controls	3	0	0	3
		8	19	0	17
Third Semester (Summer)					
COE 112CU	Co-op Work Experience I	0	0	20	2
Fourth Semester (Fall)					
COM 231	Public Speaking	3	0	0	3
CUL 130	Menu Design	2	0	0	2
CUL 180	International/American Regional Cuisine	1	8	0	5
CUL 260	Baking II (or CUL 280)	1	4	0	3
CUL 270	Gardemanger II	1	4	0	3
HRM 145	Hospitality Supervision	3	0	0	3
		11	16	0	19
Fifth Semester (Spring)					
CUL 112	Nutrition for Food Service	3	0	0	3
CUL 135	Food and Beverage Service	2	0	0	2
CUL 135A	Food and Beverage Service Lab	0	2	0	1
CUL 214	Wine Appreciation	1	2	0	2
CUL 250	Classical Cuisine	1	8	0	5
PSY 150	General Psychology	3	0	0	3
	Humanities Elective	3	0	0	3
		13	12	0	19
Program Totals		**44**	**61**	**20**	**76**

Customer Service

Certificate

The purpose of the Customer Service Certificate program is to provide students with the skills necessary to work successfully in a call center or related customer service facility. Basic training in computer technology is combined with the development of soft skills in persuasion and professionalism so that students will learn to handle a variety of technically challenging business situations. Students will learn to handle telephone and face-to-face customer service inquiries, orders, and complaints; identify customer needs and recommend products and services to meet those needs; and make sound business decisions that focus on customer satisfaction.

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
BUS	270	Professional Development	3	0	3
CIS	110	Introduction to Computers	2	2	3
MKT	123	Fundamentals of Selling	3	0	3
MKT	223	Customer Service	3	0	3
Certificate Totals			**11**	**2**	**12**

Health Information Technology

The Health Information Technology curriculm provides individuals with the knowledge and skills to process, analyze, abstract, compile, maintain, manage, and report health information.

Students will supervise departmental functions; classify, code, and index diagnoses and procedures; coordinate information for cost control, quality management, statistics, marketing, and planning; monitor governmental and non-governmental standards; facilitate research; and design system controls to monitor patient information security.

Graduates of this program may be eligible to write the national health certification examination to become a Registered Health Information Technician (RHIT). Employment opportunities include hospitals, rehabilitation facilities, nursing homes, health insurance organizations, outpatient clinics, physicians' offices, hospice, and mental health facilities.

Health Information Technology*
Associate in Applied Science Degree
(Offered in Day Only)

* Pending NCCCS State Board approval

This program consists of:		Credit Hrs.
Major courses (BIO, BUS, CIS, HIT, MED prefix)		60
Related and general education courses including:		16
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	4	
Social Science	3	
PROGRAM TOTAL		76

			Hrs. Per Week			Credit
			Class	Lab	Work	Hrs.
First Semester (Fall)						
BIO	168	Anatomy and Physiology I	3	3	0	4
CIS	110	Introduction to Computers	2	2	0	3
ENG	111	Expository Writing	3	0	0	3
HIT	110	Health Information Orientation	2	0	0	2
MED	121	Medical Terminology I	3	0	0	3
			13	5	0	15
Second Semester (Spring)						
BIO	169	Anatomy and Physiology II	3	3	0	4
HIT	112	Health Law and Ethics	3	0	0	3
HIT	114	Record Systems/Standards	2	3	0	3
HIT	212	Coding/Classification I	3	3	0	4
MED	122	Medical Terminology II	3	0	0	3
			14	9	0	17
Third Semester (Summer)						
HIT	124	Directed Practice II	1	0	3	2
HIT	214	Coding/Classification II	3	3	0	4
HIT	222	Directed Practice III	0	0	6	2
HIT	226	Principles of Disease	3	0	0	3
			7	3	9	11
Fourth Semester (Fall)						
ENG	114	Professional Research and Reporting	3	0	0	3
HIT	216	Quality Management	2	2	0	3
HIT	220	Computers in Health Care	1	2	0	2
HIT	280	Professional Issues	2	0	0	2
MAT	140	Survey of Mathematics	3	0	0	3
MAT	140A	Survey of Mathematics Lab	0	2	0	1
		Major Elective**	3	0	0	3
			14	6	0	17
Fifth Semester (Spring)						
HIT	210	Health Care Statistics	3	2	0	4
HIT	218	Management	3	0	0	3
HIT	224	Directed Practice IV	1	0	6	3
PSY	118	Interpersonal Psychology	3	0	0	3
		Humanities/Fine Arts Elective	3	0	0	3
			13	2	6	16
		Program Totals	**61**	**25**	**15**	**76**

**The hour totals include a minimum of three credit hours of major electives to be selected from: BUS 147, BUS 153, BUS 260, CIS 125, or CIS 152.

Health Information Technology
Medical Coding

Diploma

(Offered in Day Only)

This program consists of:		Credit Hrs.
Major courses (BIO, BUS, CIS, HIT, MED Prefix)		36
Related and general education courses including:		7
English/Communications	3	
Natural Sciences/Mathematics	4	
PROGRAM TOTAL		43

			Hrs. Per Week			Credit
			Class	Lab	Work	Hrs.
First Semester (Fall)						
BIO	168	Anatomy and Physiology I	3	3	0	4
CIS	110	Introduction to Computers	2	2	0	3
ENG	111	Expository Writing	3	0	0	3
HIT	110	Health Information Orientation	2	0	0	2
MED	121	Medical Terminology I	3	0	0	3
			13	5	0	15
Second Semester (Spring)						
BIO	169	Anatomy and Physiology II	3	3	0	4
HIT	112	Health Law and Ethics	3	0	0	3
HIT	114	Record Systems/Standards	2	3	0	3
HIT	212	Coding/Classification I	3	3	0	4
MED	122	Medical Terminology II	3	0	0	3
			14	9	0	17
Third Semester (Summer)						
HIT	124	Directed Practice II	1	0	3	2
HIT	214	Coding/Classification II	3	3	0	4
HIT	222	Directed Practice III	0	0	6	2
HIT	226	Principles of Disease	3	0	0	3
			7	3	9	11
Program Totals			**34**	**17**	**9**	**43**

Health Information Technology Medical Terminology

Certificate

This certificate gives students a foundation in basic medical terminology as used in medical and insurance careers. Upon completion of these courses, students should be able to pronounce, spell, and define medical terms as related to body systems and their pathological disorders. Applicants must have earned a high school diploma or GED to apply for this certificate program.

		Hrs. Per Week Class	Lab	Credit Hrs.
BIO 168	Anatomy and Physiology I	3	3	4
BIO 169	Anatomy and Physiology II	3	3	4
MED 121	Medical Terminology I	3	0	3
MED 122	Medical Terminology II	3	0	3
Certificate Totals		**12**	**6**	**14**

Hotel and Restaurant Management

The Hotel and Restaurant Management curriculum prepares students to understand and apply the administrative and practical skills needed for supervisory and managerial positions in hotels, motels, resorts, inns, restaurants, institutions, and clubs.

Course work includes front office management, food preparation, guest services, sanitation, menu writing, quality management, purchasing, and other areas critical to the success of hospitality professionals.

Upon completion, graduates should qualify for supervisory or entry-level management positions in food and lodging, including front office, reservations, housekeeping, purchasing, dining room, and marketing. Opportunities are also available in the support areas of food and equipment sales.

Mountain Tech Lodge

An on-campus motor lodge, Mountain Tech Lodge, operated and maintained by the Hotel and Restaurant Management students, provides practical experience under the direction of College faculty.

Hotel and Restaurant Management Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (ACC, COE, CUL, and HRM prefix)		55
Related and general education courses including:		19
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
Other	4	
PROGRAM TOTAL		74

		Hrs. Per Week			Credit
		Class	Lab	Work	Hrs.
First Semester (Fall)					
ACA 115	Freshman Seminar	0	2	0	1
CUL 110	Sanitation and Safety	2	0	0	2
CUL 110A	Sanitation and Safety Lab	0	2	0	1
CUL 142	Fundamentals of Food	2	6	0	5
HRM 110	Introduction to Hospitality	2	0	0	2
HRM 192	Selected Topics in Dining Room Management	1	2	0	2
MAT 115	Mathematical Models	2	2	0	3
		9	14	0	16
Second Semester (Spring)					
ACC 175	Hotel and Restaurant Accounting	3	2	0	4
CUL 135	Food and Beverage Service	2	0	0	2
CUL 135A	Food and Beverage Service Lab	0	2	0	1
ENG 111	Expository Writing	3	0	0	3
HRM 120	Front Office	3	0	0	3
HRM 120A	Front Office Lab	0	2	0	1
HRM 130	Bed and Breakfast Management	2	0	0	2
HRM 220	Food and Beverage Controls	3	0	0	3
		16	6	0	19
Third Semester (Summer)					
COE 112HR	Co-op Work Experience I	0	0	20	2
Fourth Semester (Fall)					
CIS 110	Introduction to Computers	2	2	0	3
CUL 130	Menu Design	2	0	0	2
HRM 135	Facilities Management	2	0	0	2
HRM 145	Hospitality Supervision	3	0	0	3
HRM 215	Restaurant Management	3	0	0	3
HRM 215A	Restaurant Management Lab	0	2	0	1
HRM 225	Beverage Management	2	0	0	2
HRM 240	Hospitality Marketing	3	0	0	3
		17	4	0	19
Fifth Semester (Spring)					
COM 231	Public Speaking	3	0	0	3
HRM 140	Hospitality Tourism Law	3	0	0	3
HRM 210	Meetings and Conventions	3	0	0	3
HRM 280	Hospitality Management Problems	3	0	0	3
PSY 150	General Psychology	3	0	0	3
	Humanities Elective	3	0	0	3
		18	0	0	18
Program Totals		**60**	**24**	**20**	**74**

Information Systems

The Information Systems curriculum is designed to prepare graduates for employment with organizations that use computers to process, manage, and communicate information. This is a flexible program, designed to meet community information systems needs.

Course work includes computer systems terminology and operations, logic, operating systems, database, data communications/networking, and related business topics. Studies will provide experience for students to implement, support, and customize industry-standard information systems.

Graduates should qualify for a wide variety of computer-related, entry-level positions that provide opportunities for advancement with increasing experience and ongoing training. Duties may include systems maintenance and troubleshooting, support and training, and business applications design and implementation.

Information Systems
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (ACC, BUS, CIS, NET, OST prefix)		61
Related and general education courses including:		15
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Sciences	3	
PROGRAM TOTAL		76

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
BUS	110	Introduction to Business	3	0	3
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
MAT	115	Mathematical Models	2	2	3
		Social/Behavioral Sciences Elective	3	0	3
			13	4	15
Second Semester (Spring)					
CIS	115	Introduction to Programming and Logic	2	2	3
CIS	125	CORE Integrated Software	2	2	3
CIS	130	Survey of Operating Systems	2	3	3
CIS	152	Database Concepts and Applications	2	2	3
NET	110	Data Communications and Networking	2	2	3
			10	11	15
Third Semester (Summer)					
CIS	155	Database Theory/Analysis	2	2	3
CIS	165	Desktop Publishing I	2	2	3
COM	231	Public Speaking	3	0	3
NET	120	Network Installation/Administration I	2	2	3
		Humanities Elective	3	0	3
			12	6	15

Fourth Semester (Fall)					
CIS	170	Technical Support Functions I	2	2	3
CIS	215	Hardware Installation and Maintenance	2	3	3
CIS	286	Systems Analysis and Design	3	0	3
CSC	139	Visual BASIC Programming	2	3	3
ITN	160	Principles of Web Design	2	2	3
NET	220	Network Installation and Administration II	2	2	3
			13	12	18
Fifth Semester (Spring)					
CIS	226	Trends in Technology	1	2	2
CIS	236	A+ Certification Preparation	2	2	3
CIS	288	Systems Project	1	4	3
CIS	292	Selected Topics in Information Systems	1	3	2
		Major Elective*	2	2	3
			7	13	13
	Program Totals		**55**	**46**	**76**

*The hour totals include a minimum of three credit hours of major electives to be selected from: CIS 145, CIS 157, CIS 163, COE 212IS, COE 215IS, CSC 141, CSC 239, ITN 170, NET 125, NET 145, NET 240, NET 260.

This program is also offered in the evening schedule. See Evening Programs listing.

Marketing and Retailing

Marketing and Retailing is a concentration under the curriculum title of Business Administration. This curriculum is designed to provide students with fundamental skills in marketing and retailing. Course work includes marketing, retailing, merchandising, selling, advertising, computer technology, and management. Graduates should qualify for marketing positions within manufacturing, retailing, and service organizations.

Marketing and Retailing
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (ACC, BUS, ECO, MKT prefix)		59
Related and general education courses including:		17
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Other	5	
PROGRAM TOTAL		76

		Hrs. Per Week Class	Lab	Credit Hrs
First Semester (Fall)				
ACC 120	Principles of Accounting I	3	2	4
BUS 110	Introduction to Business	3	0	3
CIS 110	Introduction to Computers	2	2	3
ENG 111	Expository Writing	3	0	3
MAT 115	Mathematical Models	2	2	3
		13	6	16
Second Semester (Spring)				
ACC 121	Principles of Accounting II	3	2	4
BUS 137	Principles of Management	3	0	3
MKT 120	Principles of Marketing	3	0	3
OST 136	Word Processing	1	2	2
	Humanities Elective	3	0	3
		13	4	15
Third Semester (Summer)				
BUS 115	Business Law I	3	0	3
BUS 135	Principles of Supervision	3	0	3
MKT 122	Visual Merchandising	3	0	3
MKT 221	Consumer Behavior	3	0	3
	Related Elective*	3	0	3
		15	0	15
Fourth Semester (Fall)				
ECO 251	Principles of Microeconomics	3	0	3
MKT 121	Retailing	3	0	3
MKT 123	Fundamentals of Selling	3	0	3
MKT 220	Advertising and Sales Promotion	3	0	3
MKT 224	International Marketing	3	0	3
		15	0	15
Fifth Semester (Spring)				
COM 231	Public Speaking	3	0	3
ECO 252	Principles of Macroeconomics	3	0	3
MKT 225	Marketing Research	3	0	3
MKT 227	Marketing Applications	3	0	3
	Related Elective*	3	0	3
		15	0	15
Program Totals		**71**	**10**	**76**

*Related Electives: BUS 116, BUS 147, BUS 153, BUS 225, BUS 230, BUS 240, BUS 260, BUS 270, MKT 223.

This program is also offered in the evening schedule. See Evening Programs listing.

Medical Office Administration

This curriculum prepares individuals for employment in medical and other health-care related offices. Course work will include medical terminology; information systems; office management; medical coding, billing, and insurance; legal and ethical issues; and formatting and word processing. Students will learn administrative and support functions and develop skills applicable in medical environments. Employment opportunities are available in medical and dental offices, hospitals, insurance companies, laboratories, medical supply companies, and other health-care related organizations.

Medical Office Administration Diploma

This program consists of:		Credit Hrs.
Major courses (BUS, CIS, MED, OST prefix)		40
Related and general education courses including:		8
English/Communications	3	
Natural Sciences/Mathematics	5	
PROGRAM TOTAL		48

Entrance requirements: keyboarding placement test into OST 134 and college English placement test.

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
BIO	163	Basic Anatomy and Physiology	4	2	5
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
MED	121	Medical Terminology I	3	0	3
OST	164	Text Editing Applications	3	0	3
			15	4	17
Second Semester (Spring)					
MED	122	Medical Terminology II	3	0	3
OST	134	Text Entry and Formatting	2	2	3
OST	136	Word Processing	1	2	2
OST	148	Medical Coding, Billing, and Insurance	3	0	3
OST	184	Records Management	1	2	2
OST	201	Medical Transcription I	3	2	4
			13	8	17

Third Semester (Summer)					
BUS	135	Principles of Supervision	3	0	3
OST	132	Keyboard Skill Building	1	2	2
OST	149	Medical Legal Issues	3	0	3
		Major Electives*	6	0	6
			13	2	14
		Program Totals	**41**	**14**	**48**

*Major Electives: ACC 120, ACC 140, BUS 270, CIS 120, CIS 165, CIS 226, COE 211OS, COE 215OS, NET 110, OST 202, OST 247, OST 248.

This program is also offered in the Evening Schedule. See Evening Programs listing.

Medical Transcription

The Medical Transcription curriculum prepares individuals to become medical language specialists who interpret and transcribe dictation by physicians and other healthcare professionals in order to document patient care and facilitate delivery of healthcare services. Students will gain extensive knowledge of medical terminology, pharmacology, human diseases, diagnostic studies, surgical procedures, and laboratory procedures. In addition to word processing skill and knowledge of voice processing equipment, students must master English grammar, spelling, and proofreading.

Graduates should qualify for employment in hospitals, medical clinics, doctors' offices, private transcription businesses, research facilities, insurance companies, and publishing companies. After acquiring work experience, individuals can apply to the American Association for Medical Transcription to become Certified Medical Transcriptionists.

Medical Transcription Diploma

This program consists of:		Credit Hrs.
Major courses (CIS, COE, MED, OST prefix)		36
Related and general education courses including:		8
English/Communications	3	
Natural Sciences/Mathematics	5	
PROGRAM TOTAL		44

			Hrs. Per Week			Credit
			Class	Lab	Co-op	Hrs.
First Semester (Fall)						
BIO	163	Basic Anatomy and Physiology	4	2	0	5
CIS	110	Introduction to Computers	2	2	0	3
MED	121	Medical Terminology I	3	0	0	3
OST	134	Text Entry and Formatting	2	2	0	3
OST	164	Text Editing Applications	3	0	0	3
			14	6	0	17

Second Semester (Spring)						
ENG	111	Expository Writing	3	0	0	3
MED	122	Medical Terminology II	3	0	0	3
OST	132	Keyboard Skill Building	1	2	0	2
OST	136	Word Processing	1	2	0	2
OST	201	Medical Transcription I	3	2	0	4
			11	6	0	14
Third Semester (Summer)						
OST	149	Medical Legal Issues	3	0	0	3
OST	184	Records Management	1	2	0	2
OST	202	Medical Transcription II	3	2	0	4
OST	286	Professional Development	3	0	0	3
			10	4	0	12
Fourth Semester (Fall)						
COE	111MT	Co-op Work Experience	0	0	10	1
Program Totals			**35**	**16**	**10**	**44**

Microcomputer Applications

Certificate

Participants in this certificate program learn about computer hardware as well as a variety of the most popular software application packages used in business. Applicants must have earned a high school diploma or GED to apply for this certificate program.

			Hrs. Per Week Class	Lab	Credit Hrs.
Required Courses:					
CIS	110	Introduction to Computers	2	2	3
CIS	120	Spreadsheet I	2	2	3
CIS	130	Survey of Operating Systems	2	3	3
Choose two electives:					
CIS	152	Database Concepts and Applications	2	2	3
CIS	165	Desktop Publishing I	2	2	3
OST	136	Word Processing	1	2	2
Certificate Totals			**9/10**	**11**	**14/15**

Networking

Certificate

Students learn the basics of computer networks including system administration and file management. Networking software such as Novell and Windows NT will be used. Internet usage will be presented. Applicants must have earned a high school diploma or GED to apply for this certificate program.

			Hrs. Per Week Class	Lab	Credit Hrs.
Required Courses:					
CIS	110	Introduction to Computers	2	2	3
NET	110	Data Communications/Networking	2	2	3
NET	120	Networking Installation & Administration I	2	2	3
NET	220	Networking Installation & Administration II	2	2	3
Certificate Totals			**8**	**8**	**12**

Networking Technology

The Networking Technology curriculum prepares individuals for employment supporting local- and wide-area networks. Students will learn how to use technologies to provide for data, voice, image, and video communications in business, industry, and education.

Course work includes design, installation, configuration, and management of local- and wide-area network hardware and software. Emphasis is placed on developing proficiency in the use of network management software and the use of hardware such as bridges and routers.

Graduates may find employment in entry-level jobs as local area network managers, network operators, network analysts, and network technicians. Graduates may also be qualified to take certification examinations for various network products, depending on their local program.

Networking Technology
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (CIS, COE, CSC, NET prefix)		57
Related and general education courses including:		16
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
Other	1	
PROGRAM TOTAL		73

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
CIS	130	Survey of Operating Systems	2	3	3
ENG	111	Expository Writing	3	0	3
MAT	115	Mathematical Models	2	2	3
NET	110	Data Communications/Networking	2	2	3
			11	11	16
Second Semester (Spring)					
CIS	115	Introduction to Programming and Logic	2	2	3
CIS	145	Operating System—Single User	2	2	3
NET	120	Network Install/Admin I	2	2	3
NET	125	Routing & Switching I	1	4	3
		Social/Behavioral Science Elective	3	0	3
			10	10	15
Third Semester (Summer)					
COM	231	Public Speaking	3	0	3
NET	145	Introduction to Linux	2	2	3
NET	220	Network Install/Admin II	2	2	3
		Humanities Elective	3	0	3
			10	4	12
Fourth Semester (Fall)					
NET	126	Routing & Switching II	1	4	3
NET	230	Wide Area Networking	2	2	3
NET	240	Network Design	3	0	3
NET	250	Advanced Networks I	2	2	3
		Major Elective*	2	2	3
			10	10	15
Fifth Semester (Spring)					
CIS	215	Hardware Installation and Maintenance	2	3	3
NET	251	Advanced Networks II	2	2	3
NET	260	Internet Development & Support	3	0	3
NET	280	Network Project	2	2	3
		Major Elective*	2	2	3
			11	9	15
Program Totals			**52**	**44**	**73**

*The hour totals include a minimum of six credit hours of major electives to be selected from: CIS 163, COE 211 IS, COE 212 IS, COE 213 IS, COE 215 IS, CSC 139, CSC 141, CSC 239, CSC 241, NET 155, NET 193, NET 225, NET 226.

This program is also offered in the evening schedule. See Evening Programs listing.

Office Systems Technology

The Office Systems Technology curriculum prepares individuals for positions in administrative support careers. It equips office professionals to respond to the demands of a dynamic computerized workplace. Students will complete courses designed to develop proficiency in the use of integrated software, oral and written communication, analysis and coordination of office duties and systems, and other support topics. Emphasis is placed on non-technical as well as technical skills.

Graduates should qualify for employment in a variety of positions in business, government, and industry. Job classifications range from entry-level to supervisor to middle management. Credits toward the A.A.S. degree in Office Systems Technology may be given to persons holding the Certified Professional Secretary rating. If interested, those holding this certification should contact the Chairperson, Department of Computer Technologies. Persons interested in becoming a candidate for the certification can obtain information from the Institute for Certifying Secretaries, 2440 Pershing Road, Suite 6, 10 Crown Center, Kansas City, Missouri 64108.

Office Systems Technology Diploma

This program consists of:		Credit Hrs.
Major courses (BUS, CIS, OST prefix)		30
Related and general education courses including:		12
English/Communications	6	
Other	6	
PROGRAM TOTAL		42

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACC	120	Principles of Accounting I	3	2	4
BUS	270	Professional Development	3	0	3
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
OST	131	Keyboarding	1	2	2
			12	6	15
Second Semester (Spring)					
CIS	120	Spreadsheet I	2	2	3
OST	134	Text Entry and Formatting	3	2	4
OST	136	Word Processing	1	2	2
OST	164	Text Editing Applications	3	0	3
OST	184	Records Management	1	2	2
			10	8	14

Third Semester (Summer)					
ACC	140	Payroll Accounting	1	2	2
BUS	135	Principles of Supervision	3	0	3
COM	231	Public Speaking	3	0	3
OST	132	Keyboard Skill Building	1	2	2
		Major Elective*	3	0	3
			11	4	13
Program Totals			**33**	**18**	**42***

*The hour totals include a minimum of three credit hours of major electives to be selected from: ACC 150, BUS 110, BUS 115, BUS 137, BUS 153, BUS 230, BUS 240, CIS 152, ECO 151, NET 110.

Office Systems Technology
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (BUS, CIS, COE, NET, OST prefix)		52
Related and general education courses including:		22
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
Other	7	
PROGRAM TOTAL		74

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
ACC	120	Principles of Accounting I	3	2	4
BUS	270	Professional Development	3	0	3
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
OST	131	Keyboarding	1	2	2
			12	8	16
Second Semester (Spring)					
CIS	120	Spreadsheet I	2	2	3
MAT	115	Mathematical Models	2	2	3
OST	134	Text Entry and Formatting	2	2	3
OST	136	Word Processing	1	2	2
OST	164	Text Editing Applications	3	0	3
OST	184	Records Management	1	2	2
			11	10	16

Third Semester (Summer)					
ACC	140	Payroll Accounting	1	2	2
BUS	135	Principles of Supervision	3	0	3
COM	231	Public Speaking	3	0	3
OST	132	Keyboard Skill Building	1	2	2
PSY	150	General Psychology	3	0	3
			11	4	13
Fourth Semester (Fall)					
BUS	260	Business Communications	3	0	3
CIS	130	Survey of Operating Systems	2	3	3
CIS	165	Desktop Publishing I	2	2	3
		Humanities Elective	3	0	3
		Major Electives*	3	0	3
			13	5	15
Fifth Semester (Spring)					
CIS	152	Database Concepts and Application	1	2	3
CIS	226	Trends in Technology	1	2	2
CIS	293	Special Topics in Information Systems	2	2	3
NET	110	Data Communication Networking	2	2	3
		Major Elective*	3	0	3
			9	8	14
Program Totals			**56**	**35**	**74***

*The hour totals include a minimum of six credit hours of major electives to be selected from: ACC 150, BUS 110, BUS 115, BUS 116, BUS 137, BUS 153, BUS 230, BUS 240, CIS 216, COE 211 OS.

PC Installation and Maintenance

Certificate

Students learn how to install, optimize, upgrade, and troubleshoot personal computer hardware and software. They gain both theoretical and hands-on experience using a variety of current hardware and software technologies. Topics such as testing electrical components, using diagnostics utilities, and user PC support interactions will be covered.

Preparation for the A+ certification examination is an integral objective of the PC Installation and Maintenance Certificate program. Success as a PC technician requires essential knowledge and skills that may be tested by the internationally recognized A+ certification exam.

Many computer hardware and software vendors, distributors, and resellers who must manage and support large hardware and software inventories seek PC installation and maintenance specialists who are A+ certified. A+ certification is a measure of competency as defined by experts across the industry.

Successful applicants for the certificate must have earned a high school diploma or GED and completed all courses listed below with at least a grade of C.

			Hrs. Per Week Class	Lab	Credit Hrs.
CIS	110	Introduction to Computers	2	2	3
CIS	130	Survey of Operating Systems	2	3	3
CIS	215	Hardware Installation and Maintenance	2	3	3
CIS	216	Software Installation and Maintenance	1	2	2
CIS	236	A+ Certification Prep	2	2	3
		Certificate Totals	**9**	**12**	**14**

Word Processing/Desktop Publishing

Certificate

This certificate program gives essential training in word processing and desktop publishing. You will learn state-of-the-art computer software that is used in offices and businesses today. Applicants must have earned a high school diploma or GED to apply for this certificate program.

Required Courses:			Hrs. Per Week Class	Lab	Credit Hrs.
CIS	110	Introduction to Computers	2	2	3
CIS	165	Desktop Publishing I	2	2	3
OST	131	Keyboarding (or tested keyboarding proficiency)	1	2	2
OST	134	Text Entry and Formatting	2	2	3
OST	136	Word Processing	1	2	2
		Certificate Totals	**8**	**10**	**13**

Engineering & Applied Technology



ENGINEERING AND APPLIED TECHNOLOGY

	Air Conditioning, Heating, and Refrigeration Technology	Automotive Systems Technology*	CAD Systems Management*
Recommended High School Courses	Electricity Electronics	Applied Mathematics Physics Electronics	Algebra Geometry Drafting
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Mathematics (2 units, including Algebra) Acceptable scores on SAT, ACT, or Reading Comprehension, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall. Can take some single courses any semester.	Day/Night Begins Fall of even years and Spring of odd years.	Day/Night Begins Fall. Night begins in odd numbered years only.
Degree	Associate in Applied Science or Diploma	Associate in Applied Science or Diploma	Associate in Applied Science
Employment Opportunities	Maintenance Tech. Climate Control Technician Service Technician Systems Engineer Refrigeration Tech. Estimator	General Automotive Technician Specialized Technician Shop Supervisor	Mechanical Design Product Design Manufacturing Design CAD Operator

**Tech Prep agreements with regional high schools.*

ENGINEERING AND APPLIED TECHNOLOGY

	Carpentry	Civil Engineering Technology	Computer Engineering Technology
Recommended High School Courses	Practical Mathematics Drafting Woodworking courses	Trigonometry Drafting	Trigonometry
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Night Begins Fall	Day Begins Fall. Night begins in odd numbered years. Can take single courses any semester.	Day/Night Begins Fall
Degree	Diploma	Associate in Applied Science	Associate in Applied Science
Employment Opportunities	Contractors as Carpenters or Estimators In Cabinet Shop as Cabinetmakers or Installers	Construction Technician Materials Testing Technician Construction Inspector Engineering Technician	Computer and Network Service Technician Systems Integration Technician Automation Specialist Integrated Manufacturing Technician Systems Support Engineer Controls Engineer

ENGINEERING AND APPLIED TECHNOLOGY

	Electrical/ Electronics Technology*	Electronic Servicing Technology	Electronics Engineering Technology*
Recommended High School Courses	Trigonometry	Technical Math Algebra I	Trigonometry
A-B Tech Entrance Requirements	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Night Begins Fall	Night Begins Fall	Day/Night Begins Fall
Degree	Associate in Applied Science or Diploma	Diploma	Associate in Applied Science
Employment Opportunities	Industrial Maintenance Technician Industrial Electrician Facilities Technician Electrical License Apprentice	Install and Service Computers, TV, Audio/Video, Entertainment, Digital Systems, VCRs, CD Players, Cable Components and Systems	Electronics Engineering Technician Electronics Maintenance Tech. Control Systems Technician

**Tech Prep agreements with regional high schools.*

ENGINEERING AND APPLIED TECHNOLOGY

	Heavy Equipment and Transport Technology	Machining Technology*	Mechanical Engineering Technology
Recommended High School Courses	Applied Mathematics Electronics Electricity	Applied Mathematics Drafting Blueprint Reading	Trigonometry Physics
A-B Tech Entrance Requirements	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day Begins Fall AAS Degree Night Begins Fall	Day/Night Begins Fall. Will also offer afternoon schedule on demand.	Day begins Fall Night begins in even numbered years. Can take single courses any semester.
Degree	Associate in Applied Science or Diploma	Associate in Applied Science or Diploma	Associate in Applied Science
Employment Opportunities	Diesel Mechanic Fuel Injection Servicer Repairer Heavy Tractor Mechanic Helper	For Manufacturers as Machinist Machine or CNC Set-Up Operator Quality Control Technician	Manufacturing Engineer Quality Control Technician Mechanical Designer Maintenance Engineering Technician Controls Engineering Technician

**Tech Prep agreements with regional high schools.*

ENGINEERING AND APPLIED TECHNOLOGY

	Surveying Technology	Tool, Die and Mold Making	Welding Technology*
Recommended High School Courses	Trigonometry Drafting	Applied Mathematics Geometry Trigonometry	Practical Arithmetic Blueprint Reading Drafting
A-B Tech Entrance Requirements	Algebra I & II or Algebra I and Plane Geometry Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Successful completion of the Machinist Program with grade of "B" or better in certain MAC and MAT courses	Acceptable scores on SAT, ACT, or Reading Comprehension and Arithmetic Skills, College Board Computerized Placement Tests (CPT).
Program Schedule	Day begins Fall Night begins in odd numbered years. Can take single courses any semester.	Day/Night Begins Fall	Day/Night Begins Fall. Can take single courses any semester.
Degree	Associate in Applied Science	Associate in Applied Science	Associate in Applied Science or Diploma
Employment Opportunities	Construction Layout Technician Land Surveyor Mapper	Positions with Tool, Die, and Moldmaking Shops	Arc Welder Arc Welder-Machine Operator Gas Welder-Machine Operator Combination Welder Pipe Welder

**Tech Prep agreements with regional high schools.*

Engineering and Applied Technology

The Engineering and Applied Technology division offers a variety of Associate in Applied Science degree programs in engineering technologies and diploma programs in applied technologies. Most programs are available on a day and evening basis.

Students enrolled in this division are provided an appropriate mix of theory and hands-on applications. Students in the diploma programs spend much of their time working under industrial shop conditions. Modern facilities include well-equipped laboratories and shops to support goals of the programs. Emphasis is placed on student proficiency in the use of procedures, equipment, and instruments related to the specific program area. Appropriate related and general education courses support these applied programs.

A.A.S. Degrees Conferred

Air Conditioning, Heating, and Refrigeration Technology
Automotive Systems Technology
CAD Systems Management
Civil Engineering Technology
Computer Engineering Technology
Electrical/Electronics Technology
Electronics Engineering Technology
Machining Technology
Mechanical Engineering Technology
Surveying Technology
Tool, Die, and Mold Making
Welding Technology

Diplomas Awarded

Air Conditioning, Heating, and Refrigeration Technology
Automotive Systems Technology
Carpentry
Electrical/Electronics Technology
Electronic Servicing Technology
Machining Technology
Heavy Equipment and Transport Technology
Welding Technology

Certificates

Air Conditioning & Heating – Basic
Air Conditioning & Heating – Intermediate
Air Conditioning & Heating – Advanced
Automotive
Computer-Aided Drafting
Welding

Air Conditioning and Heating – Basic
Certificate

The Basic Air Conditioning and Heating Certificate program teaches the student the concepts and skills needed to service and repair various types of domestic furnaces and air conditioners.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
AHR 111	HVACR Electricity	2	2	3
AHR 112	Heating	2	4	4
AHR 120	HVACR Maintenance	1	3	2
ELC 125	Wiring Diagrams and Schematics	1	2	2
		6	11	11
Second Semester (Spring)				
AHR 110	Introduction to Refrigeration	2	6	5
Certificate Totals		**8**	**17**	**16**

Air Conditioning and Heating – Intermediate
Certificate

The Intermediate Air Conditioning and Heating Certificate program teaches the student the concepts and skills needed to service and repair domestic heat pumps, light commercial air conditioning, and light commercial heating units. The material for the EPA's CFC license will be covered, and the exam for this will be given during the program.

The Basic Air Conditioning and Heating certificate program must be completed before beginning this program.

		Hrs. Per Week Class	Lab	Credit Hrs.
Second Semester (Spring)				
AHR 113	Introduction to Cooling	2	4	4
AHR 125	HVAC Electronics	1	3	2
AHR 130	HVAC Controls	2	2	3
WLD 112	Basic Welding	1	3	2
		6	12	11
Third Semester (Summer)				
AHR 115	Refrigeration Systems	1	3	2
BPR 135	Schematics and Diagrams	2	0	2
		3	3	4
Certificate Totals		**9**	**15**	**15**

Air Conditioning, Heating and Refrigeration Technology

The Air Conditioning, Heating, and Refrigeration Technology curriculum, provides the basic knowledge to develop skills necessary to work with residential and light commercial systems.

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. In addition, the A.A.S. degree covers residential building codes, residential system sizing, and advanced comfort systems.

Diploma graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems. A.A.S. degree graduates should be able to demonstrate an understanding of system selection and balance, and advanced systems.

Air Conditioning, Heating and Refrigeration Technology Diploma

		Credit Hrs.
This program consists of:		
Major courses (AHR prefix)		29
Related and general education courses including:		14
English/Communications	3	
Natural Science/Mathematics	4	
Other	7	
PROGRAM TOTAL		43

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
AHR 111	HVACR Electricity	2	2	3
AHR 112	Heating	2	4	4
AHR 120	HVACR Maintenance	1	3	2
ELC 132	Electrical Drawings	1	3	2
ENG 102	Applied Communications II (or ENG 111)	3	0	3
PHY 122	Applied Physics II	3	2	4
		12	16	19
Second Semester (Spring)				
AHR 110	Introduction to Refrigeration	2	6	5
AHR 113	Comfort Cooling	2	4	4
AHR 125	HVAC Electronics	1	3	2
AHR 130	HVAC Controls	2	2	3
WLD 112	Basic Welding	1	3	2
		8	18	16

Third Semester (Summer)				
AHR 114	Heat Pump Technology	2	4	4
AHR 115	Refrigeration Systems	1	3	2
BPR 135	Schematics and Diagrams	2	0	2
		5	7	8
Program Totals		**25**	**41**	**43**

This program is also offered in the evening schedule. See Evening Programs listing. The Associate in Applied Science Degree program may be taken in the evening upon completion of day or evening Diploma program.

Automotive

Certificate

The Automotive Certificate offers state-of-the-art automotive training in the repair of all automobiles. You will learn about the internal combustion engine, automotive fuel and electrical systems, chassis and suspension systems, braking systems, and automotive air conditioning and electronic control systems.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
AUT 115	Engine Fundamentals	2	3	3
AUT 151	Brake Systems	2	2	3
AUT 152	Brake Systems Lab	0	2	1
		4	7	7
Second Semester (Fall)				
AUT 171	Heating and Air Conditioning Systems	2	3	3
Third Semester (Spring)				
AUT 141	Suspension and Steering Systems	2	4	4
AUT 181	Engine Performance Electrical	2	3	3
AUT 182	Engine Performance Electronics Lab	0	3	1
		4	10	8
Certificate Totals		**10**	**20**	**18**

Automotive Systems Technology

The Automotive Systems Technology curriculum prepares individuals for employment as Automotive Service Technicians. It provides an introduction to automotive careers and increases student awareness of the challenges associated with this fast and ever-changing field.

Classroom and lab experiences integrate technical and academic course work. Emphasis is placed on theory, servicing and operation of brakes, electrical/electronic systems, engine performance, steering/suspension, automatic transmission/transaxles, engine repair, climate control, and manual drive trains.

Upon completion of this curriculum, students should be prepared to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

Automotive Systems Technology
Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (AUT, COE prefix)		41
Related and general education courses including:		25
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	3	
Social Science	3	
Other	10	
PROGRAM TOTAL		66

		Hrs. Per Week			Credit
		Class	Lab	Work	Hrs.
First Semester (Fall)					
ACA 115	Freshman Seminar	0	2	0	1
AUT 110	Introduction to Automotive Technology	2	2	0	3
AUT 115	Engine Fundamentals	2	3	0	3
AUT 151	Brake Systems	2	2	0	3
AUT 152	Brake Systems Lab	0	2	0	1
AUT 161	Electrical Systems	2	6	0	4
		8	17	0	15
Second Semester (Spring)					
AUT 162A	Chassis Electrical/Electronics	1	1	0	1.5
AUT 163A	Chassis Electrical/Electronics Lab	0	1	0	0.5
AUT 183	Engine Performance Fuels	2	3	0	3
AUT 184	Engine Performance Fuels Lab	0	3	0	1
CIS 113	Computer Basics	0	2	0	1
COE 113A1	Co-op Work Experience II	0	0	15	1.5
ENG 111	Expository Writing	3	0	0	3
		6	10	15	11.5
Third Semester (Summer)					
COE 112A	Co-operative Work Experience	0	0	20	2
Fourth Semester (Fall)					
AUT 162B	Chassis Electrical/Electronics	1	1	0	1.5
AUT 163B	Chassis Electrical/Electronics Lab	0	1	0	0.5
AUT 171	Heating and Air Conditioning Systems	2	3	0	3
COE 113A2	Co-operative Work Experience	0	0	15	1.5
COM 231	Public Speaking	3	0	0	3
		6	5	15	9.5

Fifth Semester (Spring)				
AUT 141A Suspension and Steering Systems	1	2	0	2
AUT 181 Engine Performance Electrical	2	3	0	3
AUT 182 Engine Performance Electronics Lab	0	3	0	1
COE 123A1 Co-operative Work Experience	0	0	15	1.5
HUM 115 Critical Thinking	3	0	0	3
	6	8	15	10.5
Sixth Semester (Summer)				
AUT 141B Suspension and Steering Systems	1	2	0	2
AUT 231 Manual Drive Trans/Axles	2	3	0	3
AUT 232 Manual Drive Trans/Axles Lab	0	3	0	1
MAT 121 Algebra/Trigonometry I (or PHY 122)	2	2	0	3
	5	10	0	9
Seventh Semester (Fall)				
AUT 221 Automotive Transmissions	2	6	0	4
COE 123A2 Co-operative Work Experience	0	0	15	1.5
SOC 215 Group Processes	3	0	0	3
	5	6	15	8.5
Program Totals	**36**	**56**	**80**	**66**

CAD

Certificate

The purpose of this certificate program is to provide basic computer-aided drafting(CAD) skills. Students learn standard drafting principles and CAD techniques for producing 2D and 3D technical drawings using AutoCAD software. Accurate and efficient use of the computer and software is emphasized.

	Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)			
DFT 111 Technical Drafting I	1	3	4
DFT 151 CAD I	2	3	3
	3	6	7
Second Semester (Spring)			
DFT 152 CAD II	2	3	3
Third Semester (Summer)			
DFT 153 CAD III	2	3	3
Certificate Totals	**7**	**12**	**13**

CAD Systems Management

The primary objective of the CAD Systems Management curriculum is to prepare individuals for employment as computer-aided drafting and design technicians. Graduates will be prepared for jobs that involve managing the engineering document process as well as the CAD system hardware and software.

Emphasis is placed on developing the student's ability to interface with computer hardware and software in an engineering design environment. Computer-aided Design systems will be used to create and manipulate 2D CAD drawings and 3D solid models. In addition, CAD drawing data will be linked to other applications such as data processing or CNC machining systems.

Coursework includes the study of technical drafting and design theory, computer hardware and operating systems, engineering document management, 2D and 3D computer-aided design, solid modeling, computer-aided manufacturing, rendering.

Mechanical Drafting Technology
CAD Systems Management
Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (DDF, DFT prefix)		37
Related and general education courses including:		35
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	4	
Social Science	3	
Other	19	
PROGRAM TOTAL		72

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CIS	110	Introduction to Computers(or CIS 111)	2	2	3
DFT	111	Technical Drafting I	1	3	2
DFT	111A	Technical Drafting I Lab	0	3	1
DFT	151	CAD I	2	3	3
EGR	110	Introduction to Engineering	2	0	2
MAC	114	Introduction to Metrology	2	0	2
			9	11	13
Second Semester (Spring)					
DFT	112	Technical Drafting II	1	3	2
DFT	112A	Technical Drafting II Lab	0	3	1
DFT	115	Architectural Drafting	1	2	2
DFT	152	CAD II	2	3	3
ENG	111	Expository Writing	3	0	3
PHY	122	Applied Physics II (or MAT 121/121A or MAT 171/171A)	3	2	4
			10	13	15

Third Semester (Summer)				
DFT 121	Introduction to Geometric Dimensioning and Tolerancing	1	2	2
DFT 153	CAD III	2	3	3
MAC 152	Advanced Machining Calculations	1	2	2
MEC 161	Manufacturing Processes I	3	0	3
MEC 161A	Manufacturing Processes I Lab	0	3	1
		7	10	11
Fourth Semester (Fall)				
COM 231	Public Speaking	3	0	3
DDF 211	Design Drafting I	2	6	4
DFT 251	Customizing CAD Software	2	2	3
DFT 252	Solid Models and Rendering	2	2	3
HUM 115	Critical Thinking	3	0	3
		12	10	16
Fifth Semester (Spring)				
DDF 221	Design Drafting Project	0	4	2
DFT 253	CAD Data Management	2	2	3
DFT 259	CAD Project	1	4	3
MEC 110	Introduction to CAD/CAM	1	2	2
SOC 215	Group Processes	3	0	3
		7	12	13
Program Totals		**45**	**56**	**72***

*Includes four hours of electives to be selected from CIS 115, CIS 120, CIS 152, MAC 121, MAC 122, MAC 124, and MEC 172.

This program is also offered in the evening schedule. See Evening Programs listing.

Carpentry

The Carpentry curriculum is designed to train students to construct residential structures using standard building materials and hand and power tools. Carpentry skills and a general knowledge of residential construction will also be taught.

Course work includes footings and foundations, framing, interior and exterior trim, cabinetry, blueprint reading, residential planning and estimating, and other related topics. Students will develop skills through hands-on participation.

Graduates should qualify for employment in the residential building construction field as rough carpenters, framing carpenters, roofers, maintenance carpenters, and other related job titles.

Carpentry
Diploma

		Credit Hrs.
This program consists of:		
Major courses (CAB, CAR prefix)		34
Related and general education courses including:		12
English/Communications	3	
Natural Science/Mathematics	3	
Other	6	
PROGRAM TOTAL		46

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
BPR 130	Blueprint Reading/Construction	1	2	2
CAB 111A	Cabinet Making I	4	3	5
CAR 110A	Introduction to Carpentry	1	0	1
CAR 111	Carpentry I	3	15	8
MAT 101	Applied Mathematics I (or PHY 122)	2	2	3
		11	22	19
Second Semester (Spring)				
CAB 111B	Cabinet Making I	0	6	2
CAR 110B	Introduction to Carpentry	1	0	1
CAR 112	Carpentry II	3	15	8
CAR 115	Residential Planning/Estimating	3	0	3
ENG 102	Applied Communications II	3	0	3
		10	21	17
Third Semester (Summer)				
CAR 113	Carpentry III	3	9	6
DFT 115	Architectural Drafting	1	2	2
DFT 119	Basic CAD	1	2	2
		5	13	10
Program Totals		**26**	**56**	**46**

This program is also offered in the evening schedule. See Evening Programs listing.

Civil Engineering Technology

The Civil Engineering Technology curriculum provides the application of relevant theory of engineering needed by technicians to carry out planning and supervisory tasks in the construction of transportation systems, residential and commercial buildings, bridges, dams, and water and wastewater treatment systems.

Coursework includes the communication and computational skills required to support the fields such as materials testing, structures, estimating, project management, hydraulics, environmental technology, and surveying. Additional coursework will cover the operation of computers and application software including computer-aided drafting.

Graduates should qualify for technician level jobs with both public and private engineering, construction, and surveying agencies.

Civil Engineering Technology
Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (CIV, SRV prefix)		44
Related and general education courses including:		30
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	10	
Social Science	3	
Other	8	
PROGRAM TOTAL		74

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CIS	111	Basic Personal Computer Literacy	1	2	2
EGR	110	Introduction to Engineering	2	0	2
EGR	115	Introduction to Engineering Technology	2	6	4
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT161 & 161A)	2	2	3
			10	10	14
Second Semester (Spring)					
CIV	110	Statics/Strength of Materials	2	6	4
ENG	114	Professional Research and Reporting	3	0	3
MAT	122	Algebra/Trigonometry II (or MAT162 & 162A)	2	2	3
PHY	131	Physics—Mechanics	3	2	4
SRV	110	Surveying I	2	6	4
			12	16	18
Third Semester (Summer)					
CIV	125	Civil/Surveying CAD	1	6	3
CIV	211	Hydraulics and Hydrology	2	3	3
SRV	111	Surveying II	2	6	4
			5	15	10
Fourth Semester (Fall)					
CIV	111	Soils and Foundations	2	3	3
CIV	210	Engineering Materials	1	3	2
CIV	215	Highway Technology	1	3	2
CIV	220	Basic Structural Concepts	1	3	2
CIV	230	Construction Estimating	2	3	3
SOC	215	Group Processes	3	0	3
			10	15	15

			Hrs. Per Week Class	Lab	Credit Hrs.
Fifth Semester (Spring)					
CIV	212	Environmental Planning	2	3	3
CIV	221	Steel and Timber Design	2	3	3
CIV	222	Reinforced Concrete	2	3	3
CIV	240	Project Management	2	3	3
CIV	250	Civil Engineering Technology Project	1	3	2
HUM	115	Critical Thinking	3	0	3
			12	15	17
		Program Totals	**49**	**71**	**74**

This program is also offered in the evening schedule. See Evening Programs listing.

Personal Computer and Network Maintenance

Certificate

This Training program provides the individual the theory and hands-on experience to become a PC specialist capable of performing maintenance and upgrades on all types of personal computer systems. This program combines the theory of computer and network operation with the practical skills neccessary for efficient diagnosis and repair work in the field. The program provides the foundation for further study of networks and new computer-based products.

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CET	111	Computer Upgrade/Repair I	2	3	3
Second Semester (Spring)					
CET	211	Computer Upgrade/Repair II	2	3	3
Third Semester (Summer)					
ELN	237	Local Area Networks (1st Mini-mester)	2	3	3
ELN	238	Advanced LANs (2nd Mini-mester)	2	3	3
			4	6	6
		Certificate Totals	**8**	**12**	**12**

Computer Engineering Technology

The Computer Engineering Technology curriculum provides the skills required to install, service and maintain computers, peripherals, networks, and microprocessor and computer controlled equipment. It includes training in both hardware and software, emphasizing operating systems concepts to provide a unified view of computer systems.

Course work includes mathematics, physics, electronics, digital circuits, and programming, with emphasis on the operation, use, and interfacing of memory and devices to the CPU. Additional topics may include communications, networks, operating systems, programming languages, Internet configuration and design, and industrial applications.

Graduates should qualify for employment opportunites in electronics technology, computer service, computer networks, server maintenance, programming, and other areas of knowledge in electronics and computer systems. Graduates may also qualify for certification in electronics, computers, or networks.

Computer Engineering Technology
Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (CET, CIS, CSC, EGR, ELC, ELN prefix)		52
Related and general education courses including:		24
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	10	
Social Science	3	
Other	2	
PROGRAM TOTAL		76

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CET	111	Computer Upgrade/Repair I	2	3	3
CIS	111	Basic PC Literacy (CIS 110)	1	2	2
EGR	110	Introduction to Engineering	2	0	2
ELC	131	DC/AC Circuit Analysis	4	3	5
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (MAT 171 & 171A)	2	2	3
			14	10	18
Second Semester (Spring)					
CET	211	Computer Upgrade/Repair II	2	3	3
CIS	115	Introduction to Programming and Logic	2	2	3
ELN	131	Electrical Devices	3	3	4
MAT	122	Algebra/Trigonometry II (MAT 172 & 172A)	2	2	3
HUM		Humanities Electives	3	0	3
			12	10	16
Third Semester (Summer)					
ELN	133	Digital Electronics	3	3	4
ELN	237	Local Area Networks (1st Mini-mester)	2	3	3
ELN	238	Advanced LANs (2nd Mini-mester)	2	3	3
PHY	131	Physics-Mechanics (PHY 151)	3	2	4
			10	11	14
Fourth Semester (Fall)					
ELC	117	Motors and Controls	2	6	4
ELN	154	Introduction to Data Communications	2	3	3
ELN	232	Introduction to Microprocessors	3	3	4
ENG	114	Professional Research and Report Writing	3	0	3
			10	12	14

Fifth Semester (Spring)					
CET	212	Integrated Manufacturing Systems	1	3	2
CET	293	Special Topics in CET	2	3	3
CSC	139	Visual BASIC Programming	2	3	3
ELC	128	Introduction to PLC	2	3	3
SOC	215	Group Processes	3	0	3
			10	12	14
		Program Totals	**56**	**55**	**76**

Electronics Engineering Technology

The Electronics Engineering Technology curriculum prepares individuals to become technicians who design, build, install, test, troubleshoot, repair, and modify developmental and production electronic components, equipment, and systems such as industrial/computer controls, manufacturing systems, communication systems, and power electronic systems.

A broad-based core of courses, including basic electricity, solid-state fundamentals, digital concepts, and microprocessors, ensures the student will develop the skills necessary to perform entry-level tasks. Emphasis is placed on developing the student's ability to analyze and troubleshoot electronic systems. Graduates should qualify for employment as engineering assistants or electronic technicians with job titles such as electronics engineering technician, field service technician, maintenance technician, electronic tester, electronic systems integrator, bench technician, and production control technician.

Electronics Engineering Technology
Associate in Applied Science Degree

	Credit Hrs.
This program consists of:	
Major courses (ELC, ELN prefix)	39
Related and general education courses including:	30
English/Communications	6
Humanities/Fine Arts	3
Natural Science/Mathematics	10
Social Science	3
Other	8
Electives	4
PROGRAM TOTAL	73

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CET	111	Computer Upgrade/Repair I	2	3	3
ELC	131	DC/AC Circuit Analysis	4	3	5
EGR	110	Introduction to Engineering Technology	2	0	2
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT171 & 171A)	2	2	3
			13	8	16

Second Semester (Spring)					
DFT	151	CAD I	2	3	3
ELC	132	Electrical Drawings	1	3	2
ELN	131	Electronic Devices	3	3	4
ELN	152	Fabrication Techniques	1	3	2
MAT	122	Algebra/Trigonometry II (or MAT172 & 172A)	2	2	3
			9	14	14
Third Semester (Summer)					
ELC	117	Motors and Controls	2	6	4
ELN	132	Linear IC Applications	3	3	4
PHY	131	Physics-Mechanics (or PHY 151)	3	2	4
		Humanities Elective	3	0	3
			11	11	15
Fourth Semester (Fall)					
ELN	133	Digital Electronics	3	3	4
ELN	234	Communications Systems	3	3	4
ELN	260	Programmable Logic Controllers	3	3	4
ENG	114	Professional Research and Report Writing	3	0	3
			12	9	15
Fifth Semester (Spring)					
ELN	232	Introduction to Microprocessors	3	3	4
ELN	275	Troubleshooting	1	2	2
SOC	215	Group Processes	3	0	3
			7	5	9
Program Totals			**52**	**47**	**73***

*The credit hours total includes a minimum of four credit hours of major electives to be selected from the following: CET 211, CET 212, CHM 121/121A, CIS 111, CIS 115, CIS 152, DFT 152, DFT 153, ELC 113, ELC 114, ELC 119, ELC 213, ELC 228, ELC 229, ELN 237, HYD 110, MAT 151, MAT 151A, MEC 161 (with 161A), MEC 250, PHY 152.

This program is also offered in the evening schedule. See Evening Programs listing.

Heavy Equipment and Transport Technology

The Heavy Equipment and Transport Technology curriculum is designed to prepare individuals with the knowledge and skills needed to service, troubleshoot, and repair medium and heavy duty vehicles.

The course work includes the purpose, construction features, and principles of operation of medium and heavy duty vehicles.

Graduates of the curriculum should qualify for entry level employment opportunities in a dealership, fleet shop, or independent garage as a technician. Graduates that have met the work experience requirement should also be prepared to take the ASE certification exam.

Heavy Equipment and Transport Technology Diploma

		Credit Hrs.
This program consists of:		
Major courses (HET prefix)		29
Related and general education courses including:		12
English/Communications	3	
Natural Science/Mathematics	3	
Other	6	
PROGRAM TOTAL		41

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
HET	110	Engines	3	9	6
HET	118	Mechanical Orientation	2	0	2
HET	125	Preventative Maintenance	1	3	2
HYD	112	Hydraulics Medium/Heavy Duty	1	2	2
MAT	101	Applied Mathematics I (or PHY 122)	2	2	3
			9	18	16
Second Semester (Spring)					
ENG	102	Applied Communications II (or ENG 111)	3	0	3
HET	112	Diesel Electrical System	3	6	5
HET	115	Electronic Engines	2	3	3
HET	119	Mechanical Transmissions	2	2	3
WLD	112	Basic Welding Processes	1	3	2
			11	14	16
Third Semester (Summer)					
CIS	113	Computer Basics	0	2	1
HET	116	A/C/Diesel Equipment	1	2	2
HET	231	Medium Heavy Duty Brake Systems	1	3	2
HET	233	Suspension and Steering	2	4	4
			4	11	9
		Program Totals	**24**	**43**	**41**

The Associate in Applied Science Degree program may be taken in the evening upon completion of the day Diploma program.

Machining Technology

The Machining Technology curriculum is designed to develop skills in the theory and safe use of hand tools, power machinery, computerized equipment and sophisticated precision inspection instruments.

Students will learn to interpret blueprints, set up manual and CNC machines, perform basic and advanced machining operations and make decisions to insure that work quality is maintained.

Employment opportunities for machining technicians exist in manufacturing industries, public institutions, governmental agencies and in a wide range of specialty machining job shops.

Machining Technology Diploma

		Credit Hrs.
This program consists of:		
Major courses (MAC prefix)		26
Related and general education courses including:		16
English/Communications	6	
Social Science	3	
Other	7	
PROGRAM TOTAL		42

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
BPR 111	Blueprint Reading I	1	2	2
MAC 111	Machining Technology I	2	12	6
MAC 121	Introduction to CNC	2	0	2
MAC 151	Machining Calculations	1	2	2
SOC 215	Group Processes	3	0	3
		9	18	16
Second Semester (Spring)				
BPR 121	Blueprint Reading II	1	2	2
COM 231	Public Speaking	3	0	3
ENG 111	Expository Writing	3	0	3
MAC 112	Machining Technology II	2	12	6
MAC 122	CNC Turning	1	3	2
MAC 124	CNC Milling	1	3	2
		11	20	18
Third Semester (Summer)				
MAC 113	Machining Technology III	2	12	6
MAC 152	Advanced Machining Calculations	1	2	2
		3	14	8
Program Totals		**23**	**52**	**42**

This program is also offered in the evening schedule. See Evening Programs listing.

Mechanical Engineering Technology

The Mechanical Engineering Technology curriculum prepares graduates for employment as mechanical technicians. Typical assignments would include assisting in the design, development, testing and repair of mechanical equipment. Emphasis is placed on the integration of theory and mechanical principles.

Coursework includes applied mechanics, manufacturing methods and processes, computer usage, computer-aided drafting, mathematics, physics, and oral and written communications. The courses will stress critical thinking, planning, and problem solving.

Graduates of the curriculum will find employment opportunities in the diversified branches of the mechanical field. Mechanical engineering technicians are employed in many types of manufacturing, fabrication, research and development, and service industries.

Mechanical Engineering Technology
Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (ATR, EGR, HYD, MEC prefix)		32
Related and general education courses including:		38
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	10	
Social Science	3	
Other	16	
Major Electives		6
PROGRAM TOTAL		76

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CIS	110	Introduction to Computers	2	2	3
DFT	111	Technical Drafting I	1	3	2
EGR	110	Introduction to Engineering	2	0	2
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I(or MAT 171 & 171A)**	2	2	3
MEC	180	Engineering Materials	2	3	3
			12	10	16
Second Semester (Spring)					
DFT	151	CAD I	2	3	3
HYD	110	Hydraulics and Pneumatics	2	3	3
MAT	122	Algebra/Trigonometry II(or MAT 172 & 172A)**	2	2	3
PHY	131	Physics – Mechanics (or PHY 151)**	3	2	4
SOC	215	Group Processes	3	0	3
			12	10	16

Third Semester (Summer)				
MAC 121	Introduction to CNC	2	0	2
MEC 161	Manufacturing Processes I	3	0	3
MEC 161A	Manufacturing Processes I Lab	0	3	1
MEC 267	Thermal Systems	2	2	3
		7	5	9
Fourth Semester (Fall)				
ELC 111	Introduction to Electricity	2	2	3
ELC 128	Introduction to PLC	2	3	3
MEC 237	Control Systems	3	2	4
MEC 250	Statics and Strength of Materials	4	3	5
		11	10	15
Fifth Semester (Spring)				
ATR 112	Introduction to Automation	2	3	3
ENG 114	Professional Research and Reporting	3	0	3
MEC 270	Machine Design	3	3	4
MEC 288	Manufacturing Engineering R&D Project	0	2	1
	Humanities Elective	3	0	3
		11	8	14
Program Totals		**53**	**43**	**76***

*The credit hours total includes a minimum of six credit hours of major electives to be selected from: COE 132, EGR 130, EGR 285, ELC 213, MEC 236, MEC 272, MEC 293, PLA 110.

**These courses are recommended for students who wish to pursue the Bachelor of Science in Manufacturing Engineering Technology degree at Western Carolina University following the A.A.S. degree.

This program is also offered in the evening schedule. See Evening Programs listing.

Surveying Technology

The Surveying Technology curriculum provides training for technicians in the many areas of surveying. Surveyors are involved in land surveying, route surveying, construction surveying, photogrammetry, mapping, global positioning systems, geographical information systems, and other areas of property description and measurements.

Course work includes the communication and computational skills required for boundary, construction, route, and control surveying, photogrammetry, topography, drainage, surveying law, and subdivision design, with emphasis upon applications of electronic data collection and related software including CAD.

Surveying Technology
Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (CIV, SRV prefix)		43
Related and general education courses including:		30
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	10	
Social Science	3	
Other	8	
PROGRAM TOTAL		73

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CIS	111	Basic Personal Computer Literacy	1	2	2
EGR	110	Introduction to Engineering	2	0	2
EGR	115	Introduction to Engineering Technology	2	6	4
ENG	111	Expository Writing	3	0	3
MAT	121	Algebra/Trigonometry I (or MAT161 & 161A)	2	2	3
			10	10	14
Second Semester (Spring)					
CIV	110	Statics/Strength of Materials	2	6	4
ENG	114	Professional Research and Reporting	3	0	3
MAT	122	Algebra/Trigonometry II (or MAT162 & 162A)	2	2	3
PHY	131	Physics — Mechanics	3	2	4
SRV	110	Surveying I	2	6	4
			12	16	18
Third Semester (Summer)					
CIV	125	Civil/Surveying CAD	1	6	3
CIV	211	Hydraulics and Hydrology	2	3	3
SRV	111	Surveying II	2	6	4
			5	15	10
Fourth Semester (Fall)					
CIV	111	Soils and Foundations	2	3	3
CIV	215	Highway Technology	1	3	2
SOC	215	Group Processes	3	0	3
SRV	210	Surveying III	2	6	4
SRV	240	Topographic/Site Surveying	2	6	4
			10	18	16

Fifth Semester (Spring)				
HUM 115	Critical Thinking	3	0	3
SRV 220	Surveying Law	2	2	3
SRV 230	Subdivision Planning	1	6	3
SRV 250	Advanced Surveying	2	6	4
SRV 260	Field and Office Practices	1	3	2
		9	17	15
Program Totals		**46**	**76**	**73**

This program is also offered in the evening schedule. See Evening Programs listing.

Tool, Die and Mold Making

Tool, Die and Mold Making is a concentration under the curriculum title of Machining Technology. This curriculum is designed to develop skills in the use of hand tools, computerized equipment and precision instruments for machine tooling used for the mass production of parts.

Students will learn to interpret blueprints, setup manual and CNC machines, perform basic and advanced machining operations. Emphasis will be placed on the production of tooling used for punching, stamping, and molding of parts.

Graduates should qualify for employment opportunities in manufacturing industries and Tool, Die, and Mold making industries.

Machining Technology — Tool, Die and Mold Making Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (MAC prefix)		55
Related and general education courses including:		21
English/Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	3	
Social Science	3	
Other	6	
PROGRAM TOTAL		76

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
BPR 111	Blueprint Reading I	1	2	2
MAC 111	Machining Technology I	2	12	6
MAC 121	Introduction to CNC	2	0	2
MAC 151	Machining Calculations	1	2	2
SOC 215	Group Processes	3	0	3
		9	16	15

		Hrs. Per Week Class	Lab	Credit Hrs.
Second Semester (Spring)				
BPR 121	Blueprint Reading II	1	2	2
COM 231	Public Speaking	3	0	3
ENG 111	Expository Writing	3	0	3
MAC 112	Machining Technology II	2	12	6
MAC 122	CNC Turning	1	3	2
MAC 124	CNC Milling	1	3	2
		11	20	18
Third Semester (Summer)				
MAC 113	Machining Technology III	2	12	6
MAC 152	Advanced Machining Calculations	1	2	2
		3	14	8
Fourth Semester (Fall)				
HUM 115	Critical Thinking	3	0	3
MAC 153	Compound Angles	1	2	2
MAC 226	CNC EDM Machining	1	3	2
MAC 243	Die Making I	2	6	4
MEC 141	Introduction to Manufacturing Processes	2	2	3
		9	13	14
Fifth Semester (Spring)				
BPR 123	Die/Mold Print Reading	1	3	2
MAC 244	Die Making II	1	9	4
MAC 245	Mold Construction I	2	6	4
MAT 121	Algebra/Trigonometry I (or PHY 122)	2	2	3
		6	20	13
Sixth Semester (Summer)				
MAC 241	Jigs and Fixtures I	2	6	4
MAC 246	Mold Construction II	1	9	4
		3	15	8
Program Totals		**41**	**98**	**76**

This program is also offered in the evening schedule. See Evening Programs listing.

Welding

Certificate

The following courses give students an understanding of the principles, methods, techniques, and skills essential for employment in the welding field and metals industry.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
WLD 115	SMAW (Stick) Plate	2	9	5
Second Semester (Spring)				
WLD 116	SMAW (Stick) Plate	1	9	4
WLD 141	Symbols and Specifications	2	2	3
		3	11	7

Third Semester (Summer)			
WLD 143 Welding Metallurgy	1	2	2
Fourth Semester (Fall)			
WLD 111 Oxy-Fuel Welding	1	3	2
Fifth Semester (Spring)			
WLD 112 Basic Welding Processes	1	3	2
Certificate Totals	**8**	**28**	**18**

Welding Technology

The Welding Technology curriculum provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry. Instruction includes consumable and nonconsumable electrode welding and cutting processes.

Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and nondestructive testing provides the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology curriculum may be employed as entry level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self-employment.

Welding Technology
Diploma

		Credit Hrs.
This program consists of:		
Major courses (WLD prefix)		32
Related and general education courses including:		6
English/Communications	3	
Natural Science/Mathematics	3	
PROGRAM TOTAL		38

	Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)			
MAT 101 Applied Mathematics I (or MAT 121 or PHY 122)	2	2	3
WLD 110 Cutting Processes	1	3	2
WLD 115 SMAW (Stick) Plate	2	9	5
WLD 121 GMAW (MIG) FCAW/Plate	2	6	4
	7	20	14

Second Semester (Spring)				
WLD 116	SMAW (Stick) Plate/Pipe	1	9	4
WLD 122	GMAW (MIG) Plate/Pipe	1	6	3
WLD 141	Symbols and Specifications	2	2	3
WLD 261	Certification Practices	1	3	2
		5	20	12
Third Semester (Summer)				
ENG 102	Applied Communications II (or ENG 111)	3	0	3
WLD 131	GTAW (TIG) Plate	2	6	4
WLD 143	Welding and Metallurgy	1	2	2
WLD 262	Inspection and Testing	2	2	3
		8	10	12
	Program Totals	**20**	**50**	**38**

This program is also offered in the evening schedule. See Evening Programs listing.

Welding Technology
Associate in Applied Science Degree

	Credit Hrs.
This program consists of:	
Major courses (WLD prefix)	41
Related and general education courses including:	28
English/Communications	6
Humanities/Fine Arts	3
Natural Science/Mathematics	4
Social Sciences	3
Other	12
PROGRAM TOTAL	69

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
PHY 122	Applied Physics II (or MAT 121)	3	2	4
WLD 110	Cutting Processes	1	3	2
WLD 115	SMAW (Stick) Plate	2	9	5
WLD 121	GMAW (MIG) FCAW/Plate	2	6	4
		8	22	16
Second Semester (Spring)				
WLD 116	SMAW (Stick) Plate/Pipe	1	9	4
WLD 122	GMAW (MIG) Plate/Pipe	1	6	3
WLD 141	Symbols and Specifications	2	2	3
WLD 261	Certification Practice	1	3	2
		5	20	12

Third Semester (Summer)				
ENG 111	Expository Writing	3	0	3
WLD 131	GTAW (TIG) Plate	2	6	4
WLD 143	Welding Metallurgy	1	2	2
WLD 262	Inspection and Testing	2	2	3
		8	10	12
Fourth Semester (Fall)				
BPR 111	Blueprint Reading I	1	2	2
DFT 111	Technical Drafting I	1	3	2
HUM 115	Critical Thinking	3	0	3
MEC 180	Engineering Materials	2	3	3
WLD 111	Oxy-Fuel Welding	1	3	2
		8	11	12
Fifth Semester (Spring)				
DFT 119	Basic CAD	1	2	2
ENG 114	Professional Research and Reporting	3	0	3
MAC 121	Introduction to CNC	2	0	2
SOC 215	Group Processes	3	0	3
WLD 132	GTAW (TIG) Plate/Pipe	1	6	3
WLD 151	Fabrication I	2	6	4
		12	14	17
Program Totals		**41**	**77**	**69**

This program is also offered in the evening schedule. See Evening Programs listing.

Arts & Sciences



ARTS & SCIENCES PROGRAMS

	College Transfer		General Occupational Technology
	Associate in Arts	Associate in Science	
Recommended High School Courses	Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.	Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.	Individuals who do not have required credits can enter A-B Tech as provisional students in these programs.
A-B Tech Entrance Requirements	Algebra I Biology and Chemistry or Physics Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I Biology and Chemistry or Physics Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).	Algebra I Biology and Chemistry or Physics Acceptable scores on SAT, ACT, or Reading Comprehension, Sentence Skills, Arithmetic Skills, and Elementary Algebra, College Board Computerized Placement Tests (CPT).
Program Schedule	Day/Afternoon/Night Can take single courses any semester.	Day/Afternoon/Night Can take single courses any semester.	Day/Night Can take single courses any semester.
Degree	Associate in Arts	Associate in Science	Associate in Applied Science or Diploma
Employment Opportunities	Transfer at junior level to four-year institutions	Transfer at junior level to four-year institutions	General technology careers

Curriculum requirements for the Associate in Arts (A.A.) Degree

Semester Hrs.

General Education Core Requirements 44

English/Communications **6**

English Composition

ENG 111 and 112, 113, or 114 are required.

Humanities/Fine Arts **12**

1. One course must be selected from three of the following disciplines: art, dance, drama, foreign languages, interdisciplinary humanities, litera ture, music, philosophy, and religion.
2. At least one course must be a literature course.
3. COM 231, Public Speaking, is required and is classified as a Humanities/ Fine Arts course, but may not substitute for the literature requirement.

Social/Behavioral Sciences **12**

1. Four courses must be selected from at least three of the following disciplines: anthropology, economics, geography, history, political science, psychology, and sociology.
2. At least one course must be a history course.

Natural Science/Mathematics **14**

Natural Sciences **8**

Select two courses, including accompanying laboratory work, from the biology, chemistry, or physics disciplines.

***Mathematics** **6**

1. MAT 161 or higher is required.
2. The other course may be selected from other quantitative subjects.

Other Required Hours 21

1. ACA 115 ..... **1**
2. Additional courses **20**

These include General Education, Pre-Major, and elective courses that have been approved for transfer. **Students should refer to Pre-Major Articulation Agreements before making selections for required hours.**

Recommended Courses

Although these courses are **not required**, they are recommended for all students who have sufficient available credit hours.

Computing **3**

CIS 110

Health/Physical Education **3**

HEA 110, HEA 120 or PED 110 plus any PED activity course

***Mathematics** **1**

MAT 161A or the lab associated with the selected mathematics course.

Total Semester Hours **65**

All college transfer courses submitted for graduation require a minimum grade of "C."

Associate in Arts Degree

Day Program Model of Semester Course Sequence*

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
CIS 110	Introduction to Computers	2	2	3
ENG 111	Expository Writing	3	0	3
MAT 161/161A	College Algebra	3	2	4
	Science Course I	3	3	4
	Social/Behavioral Sciences Course	3	0	3
		14	9	18
Second Semester (Spring)				
ENG 113	Literature-Based Research (or ENG 112)	3	0	3
MAT	Mathematics Elective	3	2	4
	Humanities/Fine Arts Course	3	0	3
	Science Course II	3	3	4
	Social/Behavioral Sciences Course	3	0	3
		15	5	17
Third Semester (Fall)				
COM 231	Public Speaking	3	0	3
	History Requirement for Social/Behavioral Sciences Course	3	0	3
	Humanities/Fine Arts Course	3	0	3
	Elective	3	0	3
	Elective	3	0	3
		15	0	15
Fourth Semester (Spring)				
ENG	Literature Requirement for Humanities/Fine Arts	3	0	3
	Social/Behavioral Sciences Course	3	0	3
	Elective	3	0	3
	Elective	3	0	3
	Elective	3	0	3
		15	0	15
Program Totals		**59**	**14**	**65**

Health/Physical Education courses may be selected any semester.

Foreign Language courses may be selected in a sequence that meets the requirements of the receiving universities.

*Courses selected may vary according to requirements of the pre-major, senior institution, etc. Course sequence and hours may vary depending on courses selected.

This program is also offered in the evening schedule. See Evening Programs listing.

Curriculum Requirements for the Associate in Science (A.S.) Degree

Semester Hrs.

General Education Core Requirements 44

English/Communications 6

English Composition

ENG 111 and 112, 113 or 114 are required.

Humanities/Fine Arts 12

1. Two courses must be selected from the following disciplines: art, dance, drama, foreign languages, interdisciplinary humanities, literature, music, philosophy, and religion.
2. At least one course, but not more than two courses, must be a literature course.
3. COM 231, Public Speaking, is required and is classified as a Humanities/ Fine Arts course, but may not substitute for the literature requirement.

Social/Behavioral Sciences 12

1. Four courses must be selected from at least three of the following disciplines: anthropology, economics, geography, history, political science, psychology, and sociology.
2. At least one course must be a history course.

Natural Science/Mathematics 14

Natural Sciences 8

Select a two-course sequence, including accompanying laboratory work, from the biology, chemistry, or physics disciplines.

***Mathematics 6**

1. MAT 171 or higher is required.
2. The other course may be a higher level math course or selected from other quantitative subjects.

Other Required Hours 21

1. ACA 115 ..... **1**
2. Mathematics, Natural Sciences, Computer Science, and pre-major courses **14**

   Must include additional mathematics, natural sciences, and/or computer science courses that have been approved for transfer. **Students should refer to Pre-Major Articulation Agreements before making selections for other required hours. 6**

Recommended Courses

Although these courses are not required, they are recommended for all students who have sufficient available credit hours.

Computing 3
CIS 110

Health/Physical Education 3
HEA 110, HEA 120 or PED 110 plus any PED activity course

***Mathematics** 1
MAT 171A or the lab associated with the selected mathematics course.

Total Semester Hours 65

All college transfer courses submitted for graduation require a minimum grade of "C."

Associate in Science Degree

Day Program Model of Semester Course Sequence*

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
CIS 110	Introduction to Computers	2	2	3
ENG 111	Expository Writing	3	0	3
MAT 175	Precalculus	4	0	4
	First Science Sequence — Course I	3	3	4
	Social/Behavioral Sciences Course	3	0	3
		15	7	18
Second Semester (Spring)				
ENG 113	Literature-Based Research (or ENG 112)	3	0	3
MAT 271	Calculus I	3	2	4
	First Science Sequence — Course II	3	3	4
	Humanities/Fine Arts Course	3	0	3
	Social/Behavioral Sciences Course	3	0	3
		15	5	17
Third Semester (Fall)				
COM 231	Public Speaking	3	0	3
MAT 272	Calculus II	3	2	4
	History Requirement for Social/Behavioral Sciences	3	0	3
	Humanities/Fine Arts Course	3	0	3
	Second Science Sequence — Course I	3	3	4
		15	5	17
Fourth Semester (Spring)				
ENG	Literature Requirement for Humanities/Fine Arts	3	0	3
MAT 285	Calculus III (Elective)	3	0	3
	Second Science Sequence — Course II	3	3	4
	Social/Behavioral Sciences Course	3	0	3
		12	3	13
Program Totals		**57**	**20**	**65**

Health/Physical Education courses may be selected any semester.
Foreign Language courses may be selected in a sequence that meets the requirements of the receiving universities.
*Courses selected may vary according to requirements of the pre-major, senior institution, etc. Course sequence and hours may vary depending on courses selected.
This program is also offered in the evening schedule. See Evening Programs listing.

Afternoon Programs

The division of Arts and Sciences offers an afternoon series of classes leading to the A.A. or A.S. degree. If your schedule leaves you "in between," then afternoon classes may be for you! The afternoon class starts are from 2:00 to 5:30 p.m. Monday through Thursday. This may provide a fast track to the completion of your degree. See the current schedule for class opportunities.

Pre-major Articulation Agreements

Pre-major Articulation Agreements are agreements between the 16 member University of North Carolina system, *some* private colleges and universities, and the 58 North Carolina Community Colleges. The agreements state that if you follow one of the pre-major programs offered by the college (see list below), have no grade below "C," and are *accepted* by the senior institution, you will enter as a junior in that major. Pre-major articulation agreements are available from Student Services and academic advisors.

CAUTION: You MUST see your advisor before registering for one of these programs!

Associate in Arts and Associate in Science Degree Pre-major Programs

Associate in Arts

Art Education
Business Administration
Business Education
Criminal Justice
English
English Education
Health Education
History
Marketing Education
Nursing
Physical Education
Political Science
Psychology
Social Science Secondary Education
Sociology

Associate in Science

Biology
Biology Education
Chemistry
Chemistry Education
Computer Science
Engineering
Mathematics
Mathematics Education

General Occupational Technology

The General Occupational Technology curriculum provides individuals with an opportunity to upgrade their skills and to earn an associate degree by taking courses suited for their occupational interests and/or needs.

The curriculum content will be individualized for students according to their occupational interests and needs. A program of study for each student will be selected from associate degree-level courses offered by the College. Graduates will become more effective workers, better qualified for advancements within their field of employment, and become qualified for a wide range of entry-level employment opportunities.

General Occupational Technology Diploma

This program consists of:	Credit Hrs.
Major courses (see list)	30
General education courses	6
PROGRAM TOTAL	36

			Hrs. Per Week Class	Lab	Credit Hrs.
General Education					
COM	231	Public Speaking	3	0	3
ENG	111	Expository Writing	3	0	3
			6	0	6
Major Hours					
BIO	168	Anatomy and Physiology I	3	3	4
BIO	169	Anatomy and Physiology II	3	3	4
CIS	110	Introduction to Computers	2	2	3
OST	131	Keyboarding**	1	2	2
PSY	150	General Psychology	3	0	3
			12	10	16

Other Major Hours* **14**

May include:

(a) any transferrable course with prefix ANT, ART, BIO, CHM, COM, DRA, ENG, GEO, GER, HEA, HIS, HUM, MAT, MUS, PED, PHI, PHY, POL, PSY, REL, SOC, or SPA;

(b) any associate degree-level Allied Health/Public Service Education division course work with prefix BIO, CHM, CJC, COE, DEN, EDU, EMS, FIP, HSE, MLT, NUR, RAD, SAB, or SWK;

(c) any associate degree-level course with prefix ACC, BUS, CIS, ECO, MED, MKT, NET, NUT, OMT, or OST.

Program Total **36**

Courses must be approved by advisor before registration.

*All courses in these lists must have a minimum grade of "C."

**Students will be tested for keyboarding skill prerequisite. If proficient in keyboarding, OST 136, Word Processing, may be taken.

This program is also offered in the evening schedule. See Evening Programs listing.

General Occupational Technology
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (see list)		49
Related and general education courses including:		16
English/Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
Other	1	
PROGRAM TOTAL		65

		Hrs. Per Week Class	Lab	Credit Hrs.
General Education				
ACA 115	Freshman Seminar	0	2	1
COM 231	Public Speaking	3	0	3
ENG 111	Expository Writing	3	0	3
HUM 115	Critical Thinking	3	0	3
MAT 115	Mathematical Models (or a higher math)	2	2	3
SOC 215	Group Processes (or SOC225 or SOC240)	3	0	3
		14	4	16
Major Hours				
BIO 168	Anatomy and Physiology I	3	3	4
BIO 169	Anatomy and Physiology II	3	3	4
BUS 110	Introduction to Business (or BUS 137)	3	0	3
CIS 110	Introduction to Computers	2	2	3
OST 131	Keyboarding**	1	2	2
PSY 150	General Psychology	3	0	3
		15	10	19

Other Major Hours* **30**

May include:

(a) any transferrable course with prefix ANT, ART, BIO, CHM, COM, DRA, ENG, GEO, GER, HEA, HIS, HUM, MAT, MUS, PED, PHI, PHY, POL, PSY, REL, SOC, or SPA;

(b) any associate degree-level Allied Health/Public Service Education division course work with prefix BIO, CHM, CJC, COE, DEN, EDU, EMS, FIP, HSE, MLT, NUR, RAD, SAB, or SWK;

(c) any associate degree-level course with prefix ACC, BUS, CIS, ECO, MED, MKT, NET, NUT, OMT, or OST.

Program Total **65**

Courses must be approved by advisor before registration.

*All courses in these lists must have a minimum grade of "C."

**Students will be tested for keyboarding skill prerequisite. If proficient in keyboarding, OST 136, Word Processing, may be taken.

This program is also offered in the evening schedule. See Evening Programs listing.

Evening Programs



Evening Programs in Allied Health and Public Service Education

Basic Law Enforcement Training

Certificate Program

This program consists of:	Credit Hrs.
One major course	18

			Hrs. Per Week Class	Lab	Credit Hrs.
CJC	100	Basic Law Enforcement Training	8	30	18

Criminal Justice Technology

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
CIS	111	Basic PC Literacy	1	2	2
CJC	111	Introduction to Criminal Justice	3	0	3
CJC	121	Law Enforcement Operations	3	0	3
CJC	231	Constitutional Law	3	0	3
			10	4	12
Second Semester (Spring)					
CJC	112	Criminology	3	0	3
CJC	132	Court Procedure and Evidence	3	0	3
CJC	151	Introduction to Loss Prevention (or CJC 251)	3	0	3
ENG	111	Expository Writing	3	0	3
			12	0	12
Third Semester (Summer)					
CJC	131	Criminal Law	3	0	3
ENG	114	Professional Research and Reporting	3	0	3
			6	0	6
Fourth Semester (Fall)					
CJC	113	Juvenile Justice	3	0	3
CJC	114	Investigative Photography	1	2	2
CJC	221	Investigative Principles	3	2	4
			7	4	9
Fifth Semester (Spring)					
CJC	122	Community Policing (or CJC 252)	3	0	3
CJC	213	Substance Abuse	3	0	3
MAT	115	Mathematical Models (or MAT 161)	2	2	3
			8	2	9
Sixth Semester (Summer)					
CJC	222	Criminalistics	3	0	3
HUM	115	Critical Thinking	3	0	3
			6	0	6

Seventh Semester (Fall)				
CJC 215	Organization and Administration	3	0	3
COM 231	Public Speaking	3	0	3
SOC 225	Social Diversity	3	0	3
		9	0	9
Eighth Semester (Spring)				
CJC 211	Counseling (or CJC 141)	3	0	3
CJC 212	Ethics and Community Relations	3	0	3
CJC 214	Victimology	3	0	3
PSY 150	General Psychology	3	0	3
		12	0	12
Program Totals		**70**	**10**	**75**

Fire Protection Technology

This curriculum is designed to provide individuals with technical and professional knowledge to make decisions regarding fire protection for both public and private sectors. It also provides a sound foundation for continuous higher learning in fire protection, administration, and management.

Coursework includes classroom and laboratory exercises to introduce the student to various aspects of fire protection. Students will learn technical and administrative skills such as hydraulics, hazardous materials, arson investigation, fire protection safety, fire suppression management, law, and codes.

Graduates should qualify for employment or advancement in governmental agencies, industrial firms, insurance rating organizations, educational organizations, and municipal fire departments. Employed persons should have opportunities for skilled and supervisory-level positions with their current organizations.

Fire Protection Technology
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (FIP prefix)		50
Minimum of 15 semester hours in Related and general education courses including:		22
English/Oral Communications	9	
Humanities/Fine Arts	3	
Natural Science/Mathematics	3	
Computer Literacy	3	
Social Sciences	3	
Other	1	
PROGRAM TOTAL		72

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACA	115	Freshman Seminar	0	2	1
CIS	110	Introduction to Computers	2	2	3
ENG	111	Expository Writing	3	0	3
FIP	120	Introduction to Fire Protection	2	0	2
			7	4	9
Second Semester (Spring)					
ENG	114	Professional Research and Reporting	3	0	3
FIP	124	Fire Prevention and Public Education	3	0	3
FIP	128	Detection and Investigation	3	0	3
			9	0	9
Third Semester (Summer)					
FIP	140	Industrial Fire Protection	2	0	2
FIP	144	Sprinklers and Auto Alarms	2	2	3
			4	2	5
Fourth Semester (Fall)					
FIP	132	Building Construction	3	0	3
FIP	230	Chemistry of Hazardous Materials I	5	0	5
MAT	115	Mathematical Models	2	2	3
			10	2	11
Fifth Semester (Spring)					
COM	231	Public Speaking	3	0	3
FIP	136	Inspections and Codes	3	0	3
FIP	152	Fire Protection Law	2	0	2
FIP	220	Fire Fighting Strategies	3	0	3
			11	0	11
Sixth Semester (Summer)					
FIP	228	Local Government Finance	2	0	2
FIP	240	Fire Service Supervision	2	0	2
			4	0	4
Seventh Semester (Fall)					
FIP	224	Instructional Methodology	4	0	4
FIP	252	Apparatus Specification and Purchase	2	0	2
FIP	276	Managing Fire Services	3	0	3
PSY	118	Interpersonal Psychology	3	0	3
			12	0	12
Eighth Semester (Spring)					
FIP	232	Hydraulics and Water Distribution	2	2	3
FIP	256	Municipal Public Relations	2	0	2
FIP	260	Fire Protection Planning	3	0	3
HUM	230	Leadership Development (or HUM elective)	3	0	3
			10	2	11
		Program Totals	**67**	**10**	**72**

Fire Protection Technology

Certificate

The certificate in Fire Protection Technology provides recognition of the accomplishments of selected courses within the Fire Protection Technology program. These courses should be of particular value to those who are serving or who aspire to serve as officers in fire departments and similar organizations as these courses are comparable with the requirements of NFPA 1021, the national *Standard for Fire Officer Professional Qualifications*, for Fire Officer 1 and 2.

This program consists of:	Credit Hrs.
Major courses	15
Related general education courses	3
PROGRAM TOTAL	18

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ENG	111	Expository Writing	3	0	3
FIP	132	Building Construction	3	0	3
FIP	276	Managing Fire Services	3	0	3
			9	0	9
Second Semester (Spring)					
FIP	152	Fire Protection Law	2	0	2
FIP	220	Firefighter Strategies	3	0	3
FIP	256	Municipal Public Relations	2	0	2
			7	0	7
Third Semester (Summer)					
FIP	240	Fire Service Supervision	2	0	2
			2	0	2
		Certificate Totals	**18**	**0**	**18**

Social Services

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Exp.	Credit Hrs.
First Semester (Fall)						
ACA	115	Freshman Seminar	0	2	0	1
CIS	110	Introduction to Computers	2	2	0	3
HSE	110	Introduction to Human Services	2	2	0	3
HSE	112	Group Process I	1	2	0	2
PSY	150	General Psychology	3	0	0	3
			8	8	0	12

Second Semester (Spring)					
ENG 111	Expository Writing	3	0	0	3
HUM 115	Critical Thinking	3	0	0	3
SOC 210	Introduction to Sociology	3	0	0	3
SWK 110	Introduction to Social Work	3	0	0	3
		12	0	0	12
Third Semester (Summer)					
PSY 281	Abnormal Psychology	3	0	0	3
SWK 115	Community Resources	2	2	0	3
		5	2	0	6
Fourth Semester (Fall)					
HSE 123	Interviewing Techniques	2	2	0	3
SOC 213	Sociology of the Family	3	0	0	3
SWK 113	Working with Diversity	3	0	0	3
		8	2	0	9
Fifth Semester (Spring)					
HSE 225	Crisis Intervention	3	0	0	3
MAT 115	Mathematical Models	2	2	0	3
SWK 220	Social Work in Client Services	3	0	0	3
		8	2	0	9
Sixth Semester (Summer)					
ENG 114	Professional Research and Reporting	3	0	0	3
HSE 125	Counseling	2	2	0	3
		5	2	0	6
Seventh Semester (Fall)					
DDT 110	Developmental Disability	3	0	0	3
HSE 220	Case Management	2	2	0	3
SAB 110	Substance Abuse Overview	3	0	0	3
		8	2	0	9
Eighth Semester (Spring)					
*COE 111SS	Co-op Work Experience I	0	0	10	1
*COE 115SS	Work Experience Seminar I	1	0	0	1
HSE 210	Human Services Issues	2	0	0	2
		3	0	10	4
Ninth Semester (Summer)					
*COE 121SS	Co-op Work Experience II	0	0	10	1
*COE 125SS	Work Experience Seminar II	1	0	0	1
SWK 214	Social Work Law	3	0	0	3
		4	0	10	5
Program Totals		**61**	**18**	**20**	**72**

*COE courses must be taken during the day schedule.

Evening Programs in Business and Hospitality Education

Accounting

Associate in Applied Science

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
ACC 120	Principles of Accounting I	3	2	4
ENG 111	Expository Writing	3	0	3
		6	4	8
Second Semester (Spring)				
ACC 121	Principles of Accounting II	3	2	4
CIS 110	Introduction to Computers	2	2	3
MAT 115	Mathematical Models	2	2	3
		7	6	10
Third Semester (Summer)				
ACC 240	Government and Not-for-Profit Accounting	3	0	3
BUS 137	Principles of Management	3	0	3
	Humanities Elective	3	0	3
		9	0	9
Fourth Semester (Fall)				
ACC 129	Individual Income Taxes	2	2	3
BUS 115	Business Law I	3	0	3
ECO 251	Principles of Microeconomics	3	0	3
MKT 120	Principles of Marketing	3	0	3
		11	2	12
Fifth Semester (Spring)				
ACC 125	Mathematics of Finance	3	0	3
ACC 130	Business Income Taxes	2	2	3
CIS 120	Spreadsheet I	2	2	3
ECO 252	Principles of Macroeconomics	3	0	3
		10	4	12
Sixth Semester (Summer)				
ACC 150	Computerized General Ledger	1	2	2
BUS 225	Business Finance	2	2	3
		3	4	5
Seventh Semester (Fall)				
ACC 220	Intermediate Accounting I	3	2	4
ACC 225	Cost Accounting	3	0	3
BUS 147	Business Insurance	3	0	3
		9	2	10

Eighth Semester (Spring)				
ACC 221	Intermediate Accounting II	3	2	4
ACC 269	Auditing	3	0	3
COM 231	Public Speaking	3	0	3
		9	2	10
	Program Totals	**64**	**24**	**76**

Business Administration

Associate in Applied Science

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
ACC 120	Principles of Accounting I	3	2	4
BUS 110	Introduction to Business	3	0	3
		6	4	8
Second Semester (Spring)				
ACC 121	Principles of Accounting II	3	2	4
CIS 110	Introduction to Computers	2	2	3
ENG 111	Expository Writing	3	0	3
		8	4	10
Third Semester (Summer)				
BUS 137	Principles of Management	3	0	3
OST 136	Word Processing	1	2	2
	Humanities Elective	3	0	3
		7	2	8
Fourth Semester (Fall)				
BUS 115	Business Law I	3	0	3
ECO 251	Principles of Microeconomics	3	0	3
MAT 115	Mathematical Models	2	2	3
MKT 120	Principles of Marketing	3	0	3
		11	2	12
Fifth Semester (Spring)				
ACC 125	Mathematics of Finance	3	0	3
BUS 135	Principles of Supervision	3	0	3
CIS 120	Spreadsheet I	2	2	3
ECO 252	Principles of Macroeconomics	3	0	3
		11	2	12
Sixth Semester (Summer)				
BUS 225	Business Finance	2	2	3
	Related Elective*	3	0	3
		5	2	6
Seventh Semester (Fall)				
ACC 129	Individual Income Taxes	2	2	3
BUS 147	Business Insurance	3	0	3
BUS 230	Small Business Management	3	0	3
	Related Elective*	3	0	3
		11	2	12

Eighth Semester (Spring)				
BUS 239	Business Applications Seminar I	1	2	2
COM 231	Public Speaking	3	0	3
	Related Elective*	3	0	3
		7	2	8
Program Totals		**66**	**20**	**76**

*Related Electives: ACC 225, BUS 116, BUS 153, BUS 240, BUS 260, BUS 270, ISC 131, MKT 121, MKT 123, MKT 220, MKT 221, MKT 223, MKT 224.

Computer Programming

Associate in Applied Science Degree

(Begins in even years only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
CIS 110	Introduction to Computers	2	2	3
ENG 111	Expository Writing	3	0	3
MAT 121	Algebra/Trigonometry I	2	2	3
	Social/Behavioral Science Elective	3	0	3
		10	4	12
Second Semester (Spring)				
ACC 120	Principles of Accounting I	3	2	4
CIS 115	Introduction to Programming and Logic	2	2	3
COM 231	Public Speaking	3	0	3
		8	4	10
Third Semester (Summer)				
CIS 130	Survey of Operating Systems	2	3	3
CSC 139	Visual BASIC Programming	2	3	3
		4	6	6
Fourth Semester (Fall)				
CIS 145	Operating System-Single User	2	3	3
CSC 239	Advanced Visual BASIC Programming	2	3	3
		4	6	6
Fifth Semester (Spring)				
CIS 152	Database Concepts and Applications	2	2	3
CSC 141	Visual C++ Programming	2	3	3
NET 110	Data Communications and Networking	2	2	3
		6	7	9
Sixth Semester (Summer)				
CIS 155	Database Theory/Analysis	2	2	3
CSC 241	Advanced Visual C++	2	3	3
		4	5	6
Seventh Semester (Fall)				
CIS 157	Database Programming I	2	2	3
CIS 215	Hardware Installation and Maintenance	2	3	3
ITN 160	Principles of Web Design	2	2	3
		6	7	9

Eighth Semester (Spring)					
CIS	163	Programming Interfaces Internet	2	2	3
CIS	286	Systems Analysis and Design	3	0	3
ITN	170	Introduction to Internet Databases	2	2	3
		Humanities Elective	3	0	3
			10	4	12
Ninth Semester (Summer)					
CSC	293	Selected Topics in Comp. Programming	1	4	3
		Major Elective*	2	3	3
			3	7	6
		Program Totals	**55**	**50**	**76**

*The hour totals include a minimum of three credit hours of major electives to be selected from CIS 125, CIS 170, CIS 236, COE 212IS, COE 215IS, NET 120, NET 125, NET 145, NET 260.

Customer Service

Certificate

The objective of this certificate is to provide students with the skills necesary to work in a call center or related customer service facility.

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CIS	110	Introduction to Computers	2	2	3
MKT	123	Fundamentals of Selling	3	0	3
			5	2	6
Second Semester (Spring)					
BUS	270	Professional Development	3	0	3
MKT	223	Customer Service	3	0	3
			6	0	6
		Certificate Totals	**11**	**2**	**12**

Hospitality Management

Certificate

The Hospitality Management Certificate provides line employees with the concepts and skills to upgrade or cross-train in their careers in the hotel and restaurant management industry. In addition, successful completion of CUL 110 leads to a nationally recognized ServSafe Certification from the National Restaurant Association. Classes meet one day a week from 4:30 to 7:30 p.m. with the exception of CUL 110 which meets from 4:30 to 6:30 p.m. Students choose one of the five classes offered.

		Hrs. Per Week Class	Lab	Credit Hrs.
Fall Semester				
HRM 140	Hospitality Tourism Law	3	0	3
HRM 220	Food and Beverage Control	3	0	3
		6	0	6
Spring Semester				
CUL 110	Sanitation and Safety	2	0	2
HRM 145	Hospitality Supervision	3	0	3
HRM 240	Hospitality Marketing	3	0	3
		8	0	8
Certificate Totals		**14**	**0**	**14**

Information Systems

Associate in Applied Science Degree

(Begins in even years only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
CIS 110	Introduction to Computers	2	2	3
ENG 111	Expository Writing	3	0	3
MAT 115	Mathematical Models	2	2	3
		7	4	9
Second Semester (Spring)				
CIS 115	Introduction to Programming and Logic	2	2	3
CIS 130	Survey of Operating Systems	2	3	3
COM 231	Public Speaking	3	0	3
		7	5	9
Third Semester (Summer)				
CSC 139	Visual BASIC Programming	2	3	3
	Humanities Elective	3	0	3
	Social/Behavioral Science Elective	3	0	3
		8	3	9
Fourth Semester (Fall)				
CIS 125	CORE Integrated Software	2	2	3
CIS 152	Database Concepts and Applications	2	2	3
NET 110	Data Communications and Networking	2	2	3
		6	6	9
Fifth Semester (Spring)				
CIS 155	Database Theory/Analysis	2	2	3
CIS 165	Desktop Publishing I	2	2	3
NET 120	Network Installation and Administration I	2	2	3
		6	6	9
Sixth Semester (Summer)				
BUS 110	Introduction to Business	3	0	3
CIS 215	Hardware Installation and Maintenance	2	3	3
		5	3	6

Seventh Semester (Fall)					
CIS	236	A+ Certification Preparation	2	2	3
ITN	160	Principles of Web Design	2	2	3
NET	220	Network Installation/Administration II	2	2	3
		Major Elective*	2	2	3
			8	8	12
Eighth Semester (Spring)					
CIS	170	Technical Support Functions	2	2	3
CIS	286	Systems Analysis and Design	3	0	3
CIS	292	Selected Topics in Information Systems	1	3	2
			6	5	8
Ninth Semester (Summer)					
CIS	226	Trends in Technology	1	2	2
CIS	288	Systems Project	1	4	3
			2	6	5
		Program Totals	**55**	**46**	**76**

*The hour totals include a minimum of three credit hours of major electives to be selected from: CIS 145, CIS 157, CIS 163, COE 212IS, COE 215IS, CSC 141, CSC 239, ITN 170, NET 125, NET 145, NET 240, NET 260.

Marketing and Retailing

Associate in Applied Science Degree

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ACC	120	Principles of Accounting I	3	2	4
BUS	110	Introduction to Business	3	0	3
ENG	111	Expository Writing	3	0	3
			9	2	10
Second Semester (Spring)					
ACC	121	Principles of Accounting II	3	2	4
CIS	110	Introduction to Computers	2	2	3
MAT	115	Mathematical Models	2	2	3
			7	6	10
Third Semester (Summer)					
BUS	137	Principles of Management	3	0	3
OST	136	Word Processing	1	2	2
		Humanities Elective	3	0	3
			7	2	8
Fourth Semester (Fall)					
BUS	115	Business Law I	3	0	3
ECO	251	Principles of Microeconomics	3	0	3
MKT	120	Principles of Marketing	3	0	3
		Related Elective*	3	0	3
			12	0	12

Fifth Semester (Spring)				
BUS 135	Principles of Supervision	3	0	3
ECO 252	Principles of Macroeconomics	3	0	3
MKT 121	Retailing	3	0	3
MKT 220	Advertising and Sales Promotion	3	0	3
		12	0	12
Sixth Semester (Summer)				
MKT 122	Visual Merchandising	3	0	3
MKT 221	Consumer Behavior	3	0	3
		6	0	6
Seventh Semester (Fall)				
COM 231	Public Speaking	3	0	3
MKT 123	Fundamentals of Selling	3	0	3
	Related Elective*	3	0	3
		9	0	9
Eighth Semester (Spring)				
MKT 224	International Marketing	3	0	3
MKT 225	Marketing Research	3	0	3
MKT 227	Marketing Applications	3	0	3
		9	0	9
Program Totals		**71**	**10**	**76**

*Related Electives: BUS 116, BUS 147, BUS 153, BUS 225, BUS 230, BUS 240, BUS 260, BUS 270, MKT 223.

Medical Office Administration

Diploma

(Begins in even years only)

Entrance requirements: Keyboarding placement test into OST 134 and college English placement test.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
BIO 163	Basic Anatomy and Physiology	4	2	5
CIS 110	Introduction to Computers	2	2	3
OST 164	Text Editing Applications	3	0	3
		9	4	11
Second Semester (Spring)				
MED 121	Medical Terminology I	3	0	3
OST 134	Text Entry and Formatting	2	2	3
OST 136	Word Processing	1	2	2
		6	4	8
Third Semester (Summer)				
ENG 111	Expository Writing	3	0	3
MED 122	Medical Terminology II	3	0	3
OST 132	Keyboard Skill Building	1	2	2
		7	2	8

Fourth Semester (Fall)				
OST 184	Records Management	1	2	2
OST 201	Medical Transcription I	3	2	4
	Major Elective*	3	0	3
		7	4	9
Fifth Semester (Spring)				
BUS 135	Principles of Supervision	3	0	3
OST 148	Medical Coding, Billing, and Insurance	3	0	3
OST 149	Medical Legal Issues	3	0	3
	Major Elective*	3	0	3
		12	0	12
Program Totals		**41**	**14**	**48**

*Major Electives: ACC 120, ACC 140, BUS 270, CIS 120, CIS 165, CIS 226, COE 211OS, COE 215OS, NET 110, OST 202, OST 247, OST 248.

Medical Transcription

Diploma

(Begins in even years only)

		Hrs. Per Week			Credit
		Class	Lab	Co-op	Hrs.
First Semester (Fall)					
BIO 163	Basic Anatomy and Physiology	4	2	0	5
CIS 110	Introduction to Computers	2	2	0	3
OST 164	Text Editing Applications	3	0	0	3
		9	4	0	11
Second Semester (Spring)					
MED 121	Medical Terminology I	3	0	0	3
OST 134	Text Entry and Formatting	2	2	0	3
OST 136	Word Processing	1	2	0	2
		6	4	0	8
Third Semester (Summer)					
MED 122	Medical Terminology II	3	0	0	3
OST 132	Keyboard Skill Building	1	2	0	2
OST 286	Professional Development	3	0	0	3
		7	2	0	8
Fourth Semester (Fall)					
ENG 111	Expository Writing	3	0	0	3
OST 184	Records Management	1	2	0	2
OST 201	Medical Transcription I	3	2	0	4
		7	4	0	9
Fifth Semester (Spring)					
OST 149	Medical Legal Issues	3	0	0	3
OST 202	Medical Transcription II	3	2	0	4
		6	2	0	7

Sixth Semester (Summer)					
COE 111MT	Co-op Work Experience	0	0	10	1
	Program Totals	**35**	**16**	**10**	**44**

Networking Technology

Associate in Applied Science Degree

(Begins in even years only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
CIS 110	Introduction to Computers	2	2	3
ENG 111	Expository Writing	3	0	3
MAT 115	Mathematical Models	2	2	3
		7	6	10
Second Semester (Spring)				
CIS 115	Introduction to Programming and Logic	2	2	3
CIS 130	Survey of Operating Systems	2	3	3
NET 110	Data Communications/Networking	2	2	3
		6	7	9
Third Semester (Summer)				
COM 231	Public Speaking	3	0	3
NET 120	Network Install/Admin I	2	2	3
	Humanities Elective	3	0	3
		8	2	9
Fourth Semester (Fall)				
CIS 145	Operating System—Single User	2	2	3
CIS 215	Hardware Installation and Maintenance	2	3	3
NET 220	Network Install/Admin II	2	2	3
		6	7	9
Fifth Semester (Spring)				
NET 125	Routing and Switching I	1	4	3
NET 230	Wide Area Networking	2	2	3
	Social/Behavioral Science Elective	3	0	3
		6	6	9
Sixth Semester (Summer)				
NET 126	Routing and Switching II	1	4	3
NET 145	Introduction to Linux	2	2	3
		3	6	6
Seventh Semester (Fall)				
NET 240	Network Design	3	0	3
NET 250	Advanced Networks I	2	2	3
NET 260	Internet Development and Support	3	0	3
	Major Elective*	2	2	3
		10	4	12

Eighth Semester (Spring)					
NET	251	Advanced Networks II	2	2	3
NET	280	Network Project	2	2	3
		Major Elective*	2	2	3
			6	6	9
		Program Totals	**52**	**44**	**73**

*The hour totals include a minimum of six credit hours of major electives to be selected from: CIS 163, COE 211 IS, COE 212 IS, COE 213 IS, COE 215 IS, CSC 139, CSC 141, CSC 239, CSC 241, NET 155, NET 193, NET 225, NET 226.

Operations Management

Operations Management is a concentration under the curriculum title of Business Administration. This curriculum is designed to educate individuals in the technical and managerial aspects of operations for manufacturing and service industries.

Emphasized are analytical reasoning, problem solving, and continuous improvement concepts required in today's dynamic business and industry environments. Concepts include quality, productivity, organizational effectiveness, financial analysis, and the management of human, physical, and information resources.

Graduates should qualify for leadership positions or enhance their professional skills in supervision, team leadership, operations planning, quality assurance, manufacturing and service management, logistics/distribution, health and safety, human resources management, and inventory/materials management.

Operations Management
Associate in Applied Science Degree

(Evening only)

This program consists of:		Credit Hrs.
Major courses (ACC, BUS, ECO, ISC, MKT, OMT prefix)		57
Related and general education courses including:		19
Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Other	7	
PROGRAM TOTAL		76

Operations Management
Associate in Applied Science Degree

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
CIS 110	Introduction to Computers	2	2	3
MAT 121	Algebra/Trigonometry	2	2	3
		4	6	7
Second Semester (Spring)				
ACC 120	Principles of Accounting I	3	2	4
CIS 120	Spreadsheet I	2	2	3
ISC 121	Environmental Health and Safety	3	0	3
		8	4	10
Third Semester (Summer)				
BUS 137	Principles of Management	3	0	3
ENG 111	Expository Writing	3	0	3
ISC 131	Quality Management	3	0	3
		9	0	9
Fourth Semester (Fall)				
ISC 210	Production and Operations Planning	3	0	3
ISC 221	Statistical Quality Control	3	0	3
MKT 120	Principles of Marketing	3	0	3
	Technical Elective**	1	2	2
		10	2	11
Fifth Semester (Spring)				
BUS 135	Principles of Supervision	3	0	3
COM 231	Public Speaking	3	0	3
	Related Elective*	3	0	3
	Humanities Elective	3	0	3
		12	0	12
Sixth Semester (Summer)				
OMT 112	Materials Management	3	0	3
	Related Elective*	3	0	3
	Related Elective*	3	0	3
		9	0	9
Seventh Semester (Fall)				
BUS 115	Business Law I	3	0	3
ECO 251	Principles of Microeconomics	3	0	3
	Related Elective*	3	0	3
		9	0	9

Eighth Semester (Spring)					
ECO	252	Principles of Macroeconomics	3	0	3
OMT	260	Issues in Operations Management	3	0	3
		Related Elective*	3	0	3
			9	0	9
		Program Totals	**70**	**12**	**76**

*Related Electives: ACC 121, ACC 225, BUS 153, BUS 260, BUS 270, ISC 132, ISC 212, ISC 277, MKT 224, OMT 132, OMT 133.
*Technical Electives: BPR 111, DFT 121, OST 136.

Quality Technology

The Quality Technology Program is a certificate track under the Operations Management curriculum. It is designed to prepare students for leadership roles in modern quality systems operations. Knowledge training focuses on the principles of Total Quality Management and the practical implementation of a quality system that complies with key standards such as ISO/QS-9000.

Students will be able to manage calibration and metrology programs, develop and control quality systems documentation (manuals and work instructions), conduct internal system audits, perform quality improvement cost assessments, use statistical techniques to document and control manufacturing or service industry processes, and manage a vendor certification program.

All courses in the Quality Technology Certificate will apply toward completion of the Operations Management associate degree program.

Quality Technology Certificate

(Evening only)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
ISC	132	Manufacturing Quality Control	2	3	3
ISC	221	Statistical Quality Control	3	0	3
			5	3	6
Second Semester (Spring)					
ISC	277	Quality Technology	4	0	4
OMT	132	ISO 9000 Standards	3	0	3
			7	0	7
Third Semester (Summer)					
ISC	212	Metrology	1	2	2
OMT	133	ISO 9000 Internal Auditor	3	0	3
			4	2	5
		Program Totals	**16**	**5**	**18**

Real Estate

The Real Estate curriculum provides the prelicensing education required by the North Carolina Real Estate Commission, prepares individuals to enter the profession, and offers additional education to meet professional development needs.

Course work includes the practices and principles of real estate, emphasizing financial and legal applications, property development, and property values.

Graduates should qualify for North Carolina Real Estate Sales and Broker examinations. They should be able to enter apprenticeship training and to provide real estate services to consumers in a competent manner.

Real Estate Certificate

(Evening only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
RLS 112	Real Estate Fundamentals	5	0	5
RLS 113	Real Estate Mathematics	2	0	2
		7	0	7
Second Semester (Spring)				
RLS 114	Real Estate Brokerage	4	0	4
RLS 216	Land Use Controls	2	0	2
		6	0	6
Program Totals		**13**	**0**	**13**

Real Estate Appraisal

The Real Estate Appraisal curriculum is designed to prepare individuals to enter the appraisal profession as a registered trainee and advance to licensed or certified appraiser levels. Course work includes appraisal theory and concepts with applications, the North Carolina Appraisal Board rules, and the Uniform Standards of Professional Appraisal Practice. Graduates should be prepared to complete the North Carolina Registered Trainee Examinations and advance to licensure or certification levels as requirements are met.

Real Estate Appraisal Certificate

(Evening only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
REA 101	Introduction to Real Estate Appraisal R-1	2	0	2
REA 102	Valuation Principles and Practices R-2	2	0	2
		4	0	4

Second Semester (Spring)					
REA	103	Applied Residential Property Valuation R-3	2	0	2
REA	201	Intro to Income Property Appraisal G-1	2	0	2
			4	0	4
Third Semester (Fall)					
REA	202	Adv. Income Capitalization Procedures G-2	2	0	2
REA	203	Applied Income Property Valuation G-3	2	0	2
			4	0	4
	Program Totals		**12**	**0**	**12**

Note: Each course will be offered in an eight week mini-mester format. Courses must be taken in sequence. State licensure or certification requires an examination and a substantial experience component. Please contact the Real Estate Program Coordinator for additional information before enrolling.

Word Processing/Desktop Publishing

Certificate

(Offered Day and Evening)

The certificate program gives essential training in word processing and desktop publishing. You will learn state-of-the-art computer software that is used in offices and businesses today. Applicants must have earned a high school diploma or a GED to apply for this certificate program.

			Hrs. Per Week Class	Lab	Credit Hrs.
CIS	110	Introduction to Computers	2	2	3
CIS	165	Desktop Publishing I	2	2	3
OST	131	Keyboarding (or proficiency test)	1	2	2
OST	134	Text Entry and Formatting	2	2	3
OST	136	Word Processing	1	2	2
	Program Totals		**8**	**10**	**13**

Evening Programs in Engineering and Applied Technology

Air Conditioning and Heating Basic

Certificate

(Evening Program)

The Basic Air Conditioning and Heating Certificate Program teaches the student the concepts and skills needed to service and repair various types of domestic furnaces and air conditioners.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
AHR 111	HVACR Electricity	2	2	3
AHR 112	Heating	2	4	4
		4	6	7
Second Semester (Spring)				
AHR 120	HVACR Maintenance	1	3	2
ELC 125	Wiring Diagrams and Schematics	1	2	2
		2	5	4
Third Semester (Summer)				
AHR 110	Introduction to Refrigeration	2	6	5
Program Totals		**8**	**17**	**16**

Air Conditioning and Heating Intermediate

Certificate

(Evening Program)

The Intermediate Air Conditioning and Heating Certificate Program teaches the student the concepts and skills needed to service and repair domestic heat pumps, light commercial air conditioning, and light commercial heating units. The material for the E.P.A.'s C.F.C. license will be covered, and the exam for this will be given during the program.

The Basic Air Conditioning and Heating program must be completed before beginning this program.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
WLD 112	Basic Welding	1	3	2
		1	3	2
Second Semester (Spring)				
AHR 130	HVAC Controls	2	2	3
		2	2	3
Fourth Semester (Fall)				
AHR 113	Introduction to Cooling	2	4	4
AHR 125	HVAC Electronics	1	3	2
BPR 135	Schematics and Diagrams	2	0	2
		5	7	8
Fifth Semester (Spring)				
AHR 115	Refrigeration Systems	1	3	2
		1	3	2
Program Totals		**9**	**15**	**15**

Air Conditioning and Heating Advanced

Certificate

(Evening Program)

Students taking the Advanced Air Conditioning and Heating Certificate program will be able to perform accurate heat load and heat loss calculations for the correct sizing of furnaces and cooling units for homes. They will also be able to design and install air duct systems as to the manufacturer's and building code's specifications. Studies of hot water and steam heating systems, commercial cooling equipment, and ground source heat pumps will further help the students acquire technical knowledge and skills.

	Hrs. Per Week Class	Lab	Credit Hrs.
Sixth Semester (Summer)			
AHR 114 Heat Pump Technology	2	4	4
	2	4	4
Seventh Semester (Fall)			
AHR 211 Residential Systems Design	2	2	3
CIS 111 Basic PC Literacy	1	2	2
	3	4	5
Eighth Semester (Spring)			
AHR 212A Advanced Comfort Systems I	1	3	2
	1	3	2
Ninth Semester (Summer)			
AHR 210 Residential Building Code–HVAC	1	2	2
	1	2	2
Tenth Semester (Fall)			
AHR 212B Advanced Comfort Systems II	1	3	2
	1	3	2
Program Totals	**8**	**16**	**15**

Air Conditioning, Heating and Refrigeration Technology

Diploma

	Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)			
ACA 115 Freshman Seminar	0	2	1
AHR 111 HVACR Electricity	2	2	3
AHR 112 Heating Technology	2	4	4
	4	8	8

Second Semester (Spring)				
AHR 120	HVACR Maintenance	1	3	2
AHR 130	HVAC Controls	2	2	3
ELC 132	Electrical Drawings	1	3	2
WLD 112	Basic Welding Processes	1	3	2
		5	11	9
Third Semester (Summer)				
AHR 110	Introduction to Refrigeration	2	6	5
Fourth Semester (Fall)				
AHR 113	Comfort Cooling	2	4	4
AHR 125	HVAC Electronics	1	3	2
BPR 135	Schematics and Diagrams	2	0	2
		5	7	8
Fifth Semester (Spring)				
AHR 115	Refrigeration Systems	1	3	2
ENG 102	Applied Communications II (or ENG 111)	3	0	3
PHY 122	Applied Physics II	3	2	4
		7	5	9
Sixth Semester (Summer)				
AHR 114	Heat Pump Technology	2	4	4
	Program Totals	**25**	**41**	**43**

Air Conditioning, Heating and Refrigeration Technology Associate in Applied Science Degree

	Credit Hrs.
This program consists of:	
Major courses (AHR prefix)	38
Related and general education courses including:	31
English/Communications	6
Humanities/Fine Arts	3
Natural Science/Mathematics	4
Social Science	3
Other	15
PROGRAM TOTAL	**69**

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
AHR 111	HVACR Electricity	2	2	3
AHR 112	Heating Technology	2	4	4
		4	8	8

Second Semester (Spring)				
AHR 120	HVACR Maintenance	1	3	2
AHR 130	HVAC Controls	2	2	3
ELC 125	Diagrams and Schematics	1	2	2
WLD 112	Basic Welding Processes	1	3	2
		5	10	9
Third Semester (Summer)				
AHR 110	Introduction to Refrigeration	2	6	5
Fourth Semester (Fall)				
AHR 113	Comfort Cooling	2	4	4
AHR 125	HVAC Electronics	1	3	2
BPR 135	Schematics and Diagrams	2	0	2
		5	7	8
Fifth Semester (Spring)				
AHR 115	Refrigeration Systems	1	3	2
ENG 102	Applied Communications II (or ENG 111)	3	0	3
PHY 122	Applied Physics II	3	2	4
		7	5	9
Sixth Semester (Summer)				
AHR 114	Heat Pump Technology	2	4	4
Seventh Semester (Fall)				
AHR 211	Residential Systems Design	2	2	3
CIS 111	Basic PC Literacy	1	2	2
COM 231	Public Speaking	3	0	3
		6	4	8
Eighth Semester (Spring)				
AHR 212A	Advanced Comfort Systems	1	3	2
ELC 128	Introduction to PLC (DFT 119 or HYD 110)	2	3	3
ISC 121	Environmental Health and Safety	3	0	3
		6	6	8
Ninth Semester (Summer)				
AHR 210	Residential Building Code/HVAC	1	2	2
SOC 215	Group Processes	3	0	3
		4	2	5
Tenth Semester (Fall)				
AHR 212B	Advanced Comfort Systems	1	3	2
HUM 115	Critical Thinking	3	0	3
		4	3	5
Program Totals		**45**	**55**	**69**

The Associate in Applied Science Degree program may be taken upon completion of the day or evening Diploma program.

Automotive Systems Technology

Diploma*

	Credit Hrs.
This program consists of:	
Major courses (AUT, COE prefix)	30
Related and general education courses including:	6
Communications	3
Natural Science/Mathematics	3
PROGRAM TOTAL	36

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
AUT 115	Engine Fundamentals	2	3	3
ENG 102	Applied Communications II (or ENG 111)	3	0	3
MAT 101	Applied Math I (or MAT 121 or PHY 122)	2	2	3
		7	5	9
Second Semester (Spring)				
AUT 161	Electrical Systems	2	6	4
AUT 171	Heating and Air Conditioning	2	3	3
		4	9	7
Third Semester (Summer)				
AUT 183	Engine Performance - Fuel	2	3	3
AUT 184	Engine Performance - Fuel Lab	0	3	1
		2	6	4
Fourth Semester (Fall)				
AUT 151	Brakes	2	2	3
AUT 152	Brake Systems Lab	0	2	1
AUT 181A	Engine Performance - Electrical	1	1.5	1.5
AUT 182A	Engine Performance - Electrical Lab	0	1.5	0.5
		3	7	6
Fifth Semester (Spring)				
AUT 141	Suspension and Steering	2	4	4
AUT 181B	Engine Performance - Electrical	1	1.5	1.5
AUT 182B	Engine Performance - Electrical Lab	0	1.5	0.5
		3	7	6
Sixth Semester (Summer)				
AUT 231	Manual Drive Trains/Axles	2	3	3
AUT 232	Manual Drive Trains/Axles	0	3	1
		2	6	4
Program Totals		**21**	**40**	**36**

*Students may take Cooperative Work Experience, (COE 112A, COE 113A and COE 123A) during the day for transfer into the Degree program in Automotive Systems Technology.

CAD

Certificate

(Evening Program)

The purpose of this certificate program is to provide basic computer-aided drafting (CAD) skills. Students learn standard drafting principles and CAD techniques for producing 2D and 3D technical drawings using AutoCAD software. Accurate and efficient use of the computer and software are emphasized.

	Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)			
DFT 111 Technical Drafting I	1	3	4
	1	3	4
Second Semester (Spring)			
DFT 151 CAD I	2	3	3
	2	3	3
Third Semester (Summer)			
DFT 152 CAD II	2	3	3
	2	3	3
Fourth Semester (Spring)			
DFT 153 CAD III	2	3	3
	2	3	3
Program Totals	**7**	**12**	**13**

Mechanical Drafting Technology
CAD Systems Management

Associate in Applied Science Degree

(Begins in even years only)

	Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)			
CIS 110 Introduction to Computers (or CIS 111)	2	2	3
DFT 111 Technical Drafting I	1	3	2
DFT 111A Technical Drafting I Lab	0	3	1
EGR 110 Introduction to Engineering	2	0	2
	5	8	8
Second Semester (Spring)			
DFT 151 CAD I	2	3	3
PHY 122 Applied Physics II (or MAT 121/121A or MAT 161/161A)	3	2	4
	5	5	7

Third Semester (Summer)				
DFT 115	Architectural Drafting	1	2	2
DFT 152	CAD II	2	3	3
MAC 114	Introduction to Metrology	2	0	2
		5	5	7
Fourth Semester (Fall)				
DFT 112	Technical Drafting II	1	3	2
DFT 112A	Technical Drafting II Lab	0	3	1
ENG 111	Expository Writing	3	0	3
		4	6	6
Fifth Semester (Spring)				
DFT 153	CAD III	2	3	3
MEC 161	Manufacturing Processes I	3	0	3
MEC 161A	Manufacturing Processes I Lab	0	3	1
		5	6	7
Sixth Semester (Summer)				
COM 231	Public Speaking	3	0	3
DFT 252	Solid Models and Rendering	2	2	3
		5	2	6
Seventh Semester (Fall)				
DDF 211	Design Drafting I	2	6	4
MAC 152	Advanced Machining Calculations	1	2	2
		3	8	6
Eighth Semester (Spring)				
DFT 121	Introduction to Geometric Dimensioning and Tolerancing	1	2	2
HUM 115	Critical Thinking	3	0	3
MEC 110	Introduction to CAD/CAM	1	2	2
		5	4	7
Ninth Semester (Summer)				
DFT 251	Customizing CAD Software	2	2	3
SOC 215	Group Processes	3	0	3
		5	2	6
Tenth Semester (Fall)				
DFT 253	CAD Data Management	2	2	3
Eleventh Semester (Spring)				
DDF 221	Design Drafting Project	0	4	2
DFT 259	CAD Project	1	4	3
		1	8	5
Program Totals		**45**	**56**	**72***

*Includes four hours of electives to be selected from: CIS 115, CIS 120, CIS 152, MAC 121, MAC 122, MAC 124, MEC 142, and MEC 172.

Carpentry

Diploma

(Begins in odd years only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
BPR 130	Blueprint Reading/Construction	1	2	2
CAR 110A	Introduction to Carpentry	1	0	1
CAR 111A	Carpentry I	2	6	4
MAT 101	Applied Mathematics I (or PHY 122)	2	2	3
		6	10	10
Second Semester (Spring)				
CAB 111A	Cabinetmaking I	4	3	5
CAR 111B	Carpentry I	1	9	4
		5	12	9
Third Semester (Summer)				
CAB 111B	Cabinetmaking I	0	6	2
CAR 110B	Introduction to Carpentry	1	0	1
CAR 112A	Carpentry II	2	3	3
		3	9	6
Fourth Semester (Fall)				
CAR 112B	Carpentry II	1	12	5
CAR 115	Residential Planning and Estimating	3	0	3
		4	12	8
Fifth Semester (Spring)				
CAR 113	Carpentry III	3	9	6
ENG 102	Applied Communications II	3	0	3
		6	9	9
Sixth Semester (Summer)				
DFT 115	Architectural Drafting	1	2	2
DFT 119	Basic CAD	1	2	2
		2	4	4
Program Totals		**26**	**56**	**46**

Civil Engineering Technology

Associate in Applied Science Degree

(Begins in odd years only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
CIS 111	Basic Personal Computer Literacy	1	2	2
EGR 115	Introduction to Engineering Technology	2	6	4
MAT 121	Algebra/Trigonometry I (or MAT 161)	2	2	3
		5	10	9

Second Semester (Spring)				
EGR 110	Introduction to Engineerinng	2	0	2
ENG 111	Expository Writing	3	0	3
MAT 122	Algebra/Trigonometry II (or MAT 162)	2	2	3
		7	2	8
Third Semester (Summer)				
SRV 110	Surveying I	2	6	4
Fourth Semester (Fall)				
CIV 110	Statics/Strength of Materials	2	6	4
SRV 111	Surveying II	2	6	4
		4	12	8
Fifth Semester (Spring)				
CIV 111	Soils and Foundations	2	3	3
CIV 210	Engineering Materials	1	3	2
ENG 114	Project Research and Reporting	3	0	3
		6	6	8
Sixth Semester (Summer)				
CIV 211	Hydraulics and Hydrology	2	3	3
PHY 131	Physics — Mechanics	3	2	4
		5	5	7
Seventh Semester (Fall)				
CIV 125	Civil/Surveying CAD	1	6	3
CIV 215	Highway Technology	1	3	2
CIV 220	Basic Structure Concepts	1	3	2
		3	12	7
Eighth Semester (Spring)				
CIV 212	Environmental Planning	2	3	3
CIV 221	Steel and Timber Design	2	3	3
CIV 230	Construction Estimates	2	3	3
		6	9	9
Ninth Semester (Summer)				
CIV 240	Project Management	2	3	3
CIV 250	Civil Engineering Technology Project	1	3	2
		3	6	5
Tenth Semester (Fall)				
CIV 222	Reinforced Concrete	2	3	3
HUM 115	Critical Thinking	3	0	3
SOC 215	Group Processes	3	0	3
		8	3	9
Program Totals		**49**	**71**	**74**

Personal Computer and Network Maintenance

Certificate

(Evening Program)

This training program provides the individual the theory and hands-on experience to become a PC specialist capable of performing maintenance and upgrades on all types of personal computer systems. The program combines the theory of computer and networking operation with the practical skills necessary for efficient diagnosis and repair work in the field. The program provides the foundation for further study of networks and new computer-based products.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
CET 111	Computer Upgrade/Repair I	2	3	3
		2	3	3
Second Semester (Spring)				
CET 211	Computer Upgrade/Repair II	2	3	3
		2	3	3
Third Semester (Summer)				
ELN 237	Local Area Networks	2	3	3
		2	3	3
Fourth Semester (Spring)				
ELN 238	Advanced LANs	2	3	3
		2	3	3
Program Totals		**8**	**12**	**12**

Computer Engineering Technology

Associate in Applied Science Degree

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
CET 111	Computer Upgrade/Repair I	2	3	3
EGR 110	Introduction to Engineering	2	0	2
MAT 121	Algebra/Trigonometry I (MAT 171 & 171A)	2	2	3
		6	5	8
Second Semester (Spring)				
CET 211	Computer Upgrade/Repair II	2	3	3
ELC 131	DC/AC Circuit Analysis	4	3	5
MAT 122	Algebra/Trigonometry II (MAT 172 & 172A)	2	2	3
		8	8	11
Third Semester (Summer)				
ELN 131	Electronic Devices	3	3	4
ENG 111	Expository Writing	3	0	3
PHY 131	Physics-Mechanics (PHY 151)	3	2	4
		9	5	11

Fourth Semester (Fall)					
CIS	111	Basic PC Literacy (CIS 110)	1	2	2
CIS	115	Introduction to Programming and Logic	2	2	3
ELN	237	Local Area Networks	2	3	3
			5	7	8
Fifth Semester (Spring)					
ELN	133	Digital Electronics	3	3	4
ELN	238	Advanced LANs	2	3	3
			5	6	7
Sixth Semester (Summer)					
CSC	139	Visual BASIC Programming or			
		(CSC 141) Visual C++ Programming	2	3	3
SOC	215	Group Processes	3	0	3
		Humanities Elective	3	0	3
			8	3	9
Seventh Semester (Fall)					
ELC	117	Motors and Controls	2	6	4
ELN	154	Introduction to Data Communications	2	3	3
			4	9	7
Eighth Semester (Spring)					
ELC	128	Introduction to PLC	2	3	3
ELN	232	Introduction to Microprocessors	3	3	4
			5	6	7
Ninth Semester (Summer)					
CET	212	Integrated Manufacturing Systems	1	3	2
CET	293	Special Topics in CET	2	3	3
ENG	114	Professional Research and Report Writing	3	0	3
			6	6	8
		Program Totals	**56**	**55**	**76**

Electrical/Electronics Technology

The Electrical/Electronics Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical/electronic systems found in residential, commercial and industrial facilities.

Training, most of which is hands-on, includes such topics as AC/DC theory, basic wiring practices, digital electronics, programmable logic controllers, industrial motor controls, the National Electric Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical/electronics field as an on-the-job trainee or apprentice, assisting in the layout, installation, and maintenance of electrical/electronic systems.

Electrical/Electronics Technology
Diploma

(Evening Only)

		Credit Hrs.
This program consists of:		
Major courses (ELC, ELN prefix)		32
Related and general education courses including:		9
Communications	3	
Natural Sciences/Mathematics	3	
Other	3	
PROGRAM TOTAL		41

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ELN 152	Fabrication Techniques	1	3	2
ENG 102	Applied Communications II (or ENG 111)*	3	0	3
MAT 101	Applied Mathematics I (or MAT 121)*	2	2	3
		6	5	8
Second Semester (Spring)				
ELC 112	DC/AC Electricity (or ELC 131)*	3	6	5
ELC 132	Electrical Drawing	1	3	2
		4	9	7
Third Semester (Summer)				
ELC 127	Software for Technicians	1	2	2
HYD 110	Hydraulics/Pneumatics I	2	3	3
		3	5	5
Fourth Semester (Fall)				
ELC 113	Basic Wiring I	2	6	4
ELC 117	Motors and Controls	2	6	4
		4	12	8
Fifth Semester (Spring)				
ELC 114	Basic Wiring II	2	6	4
ELC 128	Introduction to PLC	2	3	3
		4	9	7
Sixth Semester (Summer)				
ELC 119	NEC Calculations	1	2	2
ELC 213	Instrumentation	3	2	4
		4	4	6
Program Totals		**25**	**44**	**41**

*Students wishing to continue into the A.A.S. degree program should take these courses.

**All courses except ELC 113, ELC 114, and ELC 119 are offered during the day.

Electrical/Electronics Technology
Associate in Applied Science Degree

(Evening Only)

		Credit Hrs.
This program consists of:		
Major courses (ELC, ELN prefix)		44
Related and general education courses including:		30
Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	10	
Social Science	3	
Other	8	
PROGRAM TOTAL		74

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
EGR 110	Introduction to Engineering Technology	2	0	2
ELN 152	Fabrication Techniques	1	3	2
MAT 121	Algebra/Trigonometry I	2	2	3
		5	5	7
Second Semester (Spring)				
ELC 112	DC/AC Electricity (or ELC 131)	3	6	5
MAT 122	Algebra/Trigonometry II	2	2	3
		5	8	8
Third Semester (Summer)				
ELN 131	Electronic Devices	3	3	4
PHY 131	Physics — Mechanics	3	2	4
		6	5	8
Fourth Semester (Fall)				
CIS 110	Introduction to Computers	2	2	3
ELC 113	Basic Wiring I	2	6	4
ENG 111	Expository Writing	3	0	3
		7	8	10
Fifth Semester (Spring)				
ELC 114	Basic Wiring II	2	6	4
ELC 132	Electrical Drawings	1	3	2
ENG 114	Professional Research and Report Writing	3	0	3
		6	9	9
Sixth Semester (Summer)				
ELC 119	National Electric Code Calculations	1	2	2
ELC 213	Instrumentation	3	2	4
HYD 110	Hydraulics/Pneumatics	2	2	3
		6	6	9

Seventh Semester (Fall)				
ELC 117	Motors and Controls	2	6	4
SOC 215	Group Processes	3	0	3
	Humanities Elective	3	0	3
		8	6	10
Eighth Semester (Spring)				
ELC 128	Introduction to PLC	2	3	3
ELN 133	Digital Electronics	3	3	4
		5	6	7
Ninth Semester (Summer)				
ELC 228	PLC Applications	2	6	4
ELC 229	Applications Project	1	3	2
		3	9	6
Program Totals		**51**	**62**	**74**

Electronic Servicing Technology

The Electronic Servicing Technology curriculum is designed to provide basic knowledge and skills required in the installation, maintenance, and servicing of electronic components and systems. Men and women will gain entry level skills necessary for success in an ever changing high-technology world.

Students will learn to install, maintain, and service components in both consumer and industrial electronic fields. This includes but is not limited to radios, television, audio/video equipment, digital and microprocessor controlled systems, computers, and monitors.

Graduates should qualify for employment in a wide variety of businesses and industries that require electronic servicing technicians. Opportunities exist in areas such as consumer electronic repairs, business systems, and industrial electronic servicing.

Electronic Servicing Technology
Diploma

(Evening Only)

		Credit Hrs.
This program consists of:		
Major courses (ELC, ELN prefix)		28
Related and general education courses including:		12
Communications	3	
Natural Science/Mathematics	3	
Other	6	
PROGRAM TOTAL		40

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ELC 140	Fundamentals of DC/AC Circuits	5	6	7
MAT 101	Applied Mathematics I	2	2	3
		7	8	10
Second Semester (Spring)				
ELN 140	Semiconductor Devices	4	6	6
ENG 102	Applied Communications II	3	0	3
		7	6	9
Third Semester (Summer)				
ELN 141	Digital Fundamentals	4	6	6
Fourth Semester (Fall)				
CET 111	Computer Upgrade/Repair I	2	3	3
ELN 242	Audio Servicing	2	3	3
		4	6	6
Fifth Semester (Spring)				
CET 211	Computer Upgrade/Repair II	2	3	3
Sixth Semester (Summer)				
ELN 143	Television Servicing	4	6	6
	Program Totals	**28**	**35**	**40**

Electronics Engineering Technology

Associate in Applied Science Degree

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
EGR 110	Introduction to Engineering Technology	2	0	2
ELN 152	Fabrication Techniques	1	3	2
MAT 121	Algebra/Trigonometry I (or MAT 171& 171A)	2	2	3
		5	5	7
Second Semester (Spring)				
ELC 131	DC/AC Circuit Analysis	4	3	5
MAT 122	Algebra/Trigonometry II (or MAT 172 & 172A)	2	2	3
		6	5	8
Third Semester (Summer)				
CET 111	Computer Upgrade/Repair I	2	3	3
ELN 131	Electronic Devices	3	3	4
ENG 111	Expository Writing	3	0	3
		8	6	10
Fourth Semester (Fall)				
ELN 132	Linear IC Applications	3	3	4
PHY 131	Physics — Mechanics (or PHY 151)	3	2	4
		6	5	8

Fifth Semester (Spring)					
DFT	151	CAD I	2	3	3
ELC	132	Electrical Drawing	1	3	2
ELN	133	Digital Electronics	3	3	4
			6	9	9
Sixth Semester (Summer)					
ELN	234	Communication Systems	3	3	4
SOC	215	Group Processes	3	0	3
			6	3	7
Seventh Semester (Fall)					
ELC	117	Motors and Controls	2	6	4
ELN	260	Programmable Logic Controllers	3	3	4
			5	9	8
Eighth Semester (Spring)					
ELN	232	Introduction to Microprocessors	3	3	4
ENG	114	Professional Research and Report Writing	3	0	3
			6	3	7
Ninth Semester (Summer)					
ELN	275	Troubleshooting	1	2	2
		Humanities Elective	3	0	3
			4	2	5
		Program Totals	**52**	**47**	**73***

*Includes a minimum of four hours of major electives to be selected from: CET 211, CET 212, CHM 121/121A, CIS 111, CIS 115, CIS 152, DFT 152, DFT 153, ELC 113, ELC 114, ELC 119, ELC 213, ELC 228, ELC 229, ELN 237, HYD 110, MAT 151, MAT 151A, MEC 161 (with 161A), MEC 250, PHY 152.

Heavy Equipment and Transport Technology

Associate in Applied Science

(To be taken after completion of Diploma (day) program)

		Credit Hrs.
This program consists of:		
Major courses (HET prefix)		36
Related and general education courses including:		32
English/Communications	9	
Humanities/Fine Arts	3	
Natural Science/Mathematics	3	
Social Sciences	3	
Other	14	
PROGRAM TOTAL		68

		Hrs. Per Week Class	Lab	Work	Credit Hrs.
First Semester (Fall)					
ACA 115	Freshman Seminar	0	2	0	1
HET 110	Engines	3	9	0	6
HET 118	Mechanical Orientation	2	0	0	2
HET 125	Preventative Maintenance	1	3	0	2
HYD 112	Hydraulics Medium/Heavy Duty	1	2	0	2
MAT 101	Applied Mathematics I (or PHY 122)	2	2	0	3
		9	18	0	16
Second Semester (Spring)					
ENG 102	Applied Communications II (or ENG 111)	3	0	0	3
HET 112	Diesel Electrical System	3	6	0	5
HET 115	Electronic Engines	2	3	0	3
HET 119	Mechanical Transmissions	2	2	0	3
WLD 112	Basic Welding Processes	1	3	0	2
		11	14	0	16
Third Semester (Summer)					
CIS 113	Computer Basics	0	2	0	1
HET 116	A/C/Diesel Equipment	1	2	0	2
HET 231	Medium Heavy Duty Brake Systems	1	3	0	2
HET 233	Suspension and Steering	2	4	0	4
		4	11	0	9
Fourth Semester (Fall)					
COE 114	Co-op Work Experience I	0	0	40	4
ENG 111	Expository Writing	3	0	0	3
HET 114A	Powertrains	2	3	0	3
SOC 215	Group Processes	3	0	0	3
		8	3	40	13
Fifth Semester (Spring)					
COE 124	Co-op Work Experience II	0	0	40	4
COM 231	Public Speaking	3	0	0	3
HET 114B	Powertrains	1	3	0	2
HET 128	Medium/Heavy Duty Tune-Up	1	2	0	2
HUM 115	Critical Thinking	3	0	0	3
		8	5	40	14
Program Totals		**40**	**51**	**80**	**68**

Machining Technology

Diploma

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
BPR 111	Blueprint Reading I	1	2	2
MAC 111A	Machining Technology I	1	6	3
MAC 151	Machining Calculations	1	2	2
		3	10	7
Second Semester (Spring)				
BPR 121	Blueprint Reading II	1	2	2
COM 231	Public Speaking	3	0	3
MAC 111B	Machining Technology I	1	6	3
		5	8	8
Third Semester (Summer)				
ACA 115	Freshman Seminar	0	2	1
MAC 112A	Machining Technology II	1	4	2
MAC 121	Introduction to CNC	2	0	2
		3	6	5
Fourth Semester (Fall)				
MAC 112B	Machining Technology II	1	8	4
MAC 124	CNC Milling	1	3	2
MAC 152	Advanced Machining Calculations	1	2	2
		3	13	8
Fifth Semester (Spring)				
ENG 111	Expository Writing	3	0	3
MAC 113A	Machining Technology III	1	8	4
MAC 122	CNC Turning	1	3	2
		5	11	9
Sixth Semester (Summer)				
MAC 113B	Machining Technology III	1	4	2
SOC 215	Group Processes	3	0	3
		4	4	5
Program Total		**23**	**52**	**42**

Machining Technology
Associate in Applied Science Degree

		Credit Hrs.
This program consists of:		
Major courses (MAC prefix)		42
Related and general education courses including:		26
Communications	6	
Humanities/Fine Arts	3	
Natural Science/Mathematics	3	
Social Science	3	
Other	11	
PROGRAM TOTAL		68

	Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)			
BPR 111 Blueprint Reading I	1	2	2
MAC 111A Machining Technology I	1	6	3
MAC 151 Machining Calculations	1	2	2
	3	10	7
Second Semester (Spring)			
BPR 121 Blueprint Reading II	1	2	2
COM 231 Public Speaking	3	0	3
MAC 111B Machining Technology I	1	6	3
	5	8	8
Third Semester (Summer)			
ACA 115 Freshman Seminar	0	2	1
MAC 112A Machining Technology II	1	4	2
MAC 121 Introduction to CNC	2	0	2
	3	6	5
Fourth Semester (Fall)			
MAC 112B Machining Technology II	1	8	4
MAC 124 CNC Milling	1	3	2
MAC 152 Advanced Machining Calculations	1	2	2
	3	13	8
Fifth Semester (Spring)			
ENG 111 Expository Writing	3	0	3
MAC 113A Machining Technology III	1	8	4
MAC 122 CNC Turning	1	3	2
	5	11	9
Sixth Semester (Summer)			
MAC 113B Machining Technology III	1	4	2
SOC 215 Group Processes	3	0	3
	4	4	5
Seventh Semester (Fall)			
MAC 214A Machining Technology IV	1	6	3
	1	6	3
Eighth Semester (Spring)			
MAC 214B Machining Technology IV	1	6	3
MAC 229 CNC Programming	2	0	2
	3	6	5
Ninth Semester (Summer)			
MAC 224 Advanced CNC Milling	1	3	2
Tenth Semester (Fall)			
MAC 226 CNC EDM Machining	1	3	2
MAT 121 Algebra/Trigonometry (or PHY 122)	2	2	3
MEC 231 CAM I	1	4	3
	4	9	8

Eleventh Semester (Spring)				
MAC 247	Production Tooling	2	0	2
MEC 232	CAM II	1	4	3
	Humanities Elective	3	0	3
		6	4	8
Program Totals		**38**	**80**	**68**

Mechanical Engineering Technology

Associate in Applied Science Degree

(Begins in even years only)

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
EGR 110	Introduction to Engineering	2	0	2
MAT 121	Algebra/Trigonometry I (or MAT 171 & 171A)**	2	2	3
MEC 180	Engineering Materials	2	3	3
		6	5	8
Second Semester (Spring)				
CIS 110	Introduction to Computers	2	2	3
DFT 111	Technical Drafting I	1	3	2
MAT 122	Algebra/Trigonometry II (or MAT 172 & 172A)**	2	2	3
		5	7	8
Third Semester (Summer)				
DFT 151	CAD I	2	3	3
ENG 111	Expository Writing	3	0	3
		5	3	6
Fourth Semester (Fall)				
HYD 110	Hydraulics and Pneumatics	2	3	3
SOC 215	Group Processes	3	0	3
		5	3	6
Fifth Semester (Spring)				
ELC 111	Introduction to Electricity	2	2	3
PHY 131	Physics–Mechanics(or PHY 151)**	3	2	4
		5	4	7
Sixth Semester (Summer)				
MEC 161	Manufacturing Processes I	3	0	3
MEC 161A	Manufacturing Processes I Lab	0	3	1
MEC 267	Thermal Systems	2	2	3
		5	5	7
Seventh Semester (Fall)				
MAC 121	Introduction to CNC	2	0	2
MEC 250	Statics and Strength of Materials	4	3	5
		6	3	7
Eighth Semester (Spring)				
ENG 114	Professional Research and Reporting	3	0	3
MEC 270	Machine Design	3	3	4
		6	3	7

Ninth Semester (Summer)					
ELC	128	Introduction to PLC	2	3	3
Tenth Semester (Fall)					
MEC	237	Control Systems	3	2	4
		Humanities Elective	3	0	3
			6	2	7
Eleventh Semester (Spring)					
ATR	112	Introduction to Automation	2	3	3
MEC	288	Manufacturing Engineering R&D Project	0	2	1
			2	5	4
	Program Totals		**53**	**43**	**76***

*The credit hours total includes a minimum of six credit hours of major electives to be selected from: COE 132, EGR 130, EGR 285, ELC 213, MEC 236, MEC 272, MEC 293, PLA 110.

**These courses are recommended for students who wish to pursue the Bachelor of Science in Manufacturing Engineering Technology degree at Western Carolina University following the A.A.S. degree.

Surveying Technology

Associate in Applied Science Degree

(Begins in even years only)

			Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)					
CIS	111	Basic PC Literacy	1	2	2
EGR	115	Introduction to Engineering Technology	2	6	4
MAT	121	Algebra/Trigonometry I (or MAT 161 & 161A)	2	2	3
			5	10	9
Second Semester (Spring)					
EGR	110	Introduction to Engineering	2	0	2
ENG	111	Expository Writing	3	0	3
MAT	122	Algebra/Trigonometry II (or MAT 162 & 162A)	2	2	3
			7	2	8
Third Semester (Summer)					
PHY	131	Physics — Mechanics	3	2	4
SRV	110	Surveying I	2	6	4
			5	8	8
Fourth Semester (Fall)					
CIV	110	Statics/Strength of Materials	2	6	4
SRV	111	Surveying II	2	6	4
			4	12	8
Fifth Semester (Spring)					
CIV	111	Soils and Foundations	2	3	3
ENG	114	Project Research and Reporting	3	0	3
SRV	210	Surveying III	2	6	4
			7	9	10

Sixth Semester (Summer)				
CIV 211	Hydraulics and Hydrology	2	3	3
Seventh Semester (Fall)				
CIV 125	Civil/Surveying CAD	1	6	3
CIV 215	Highway Technology	1	3	2
SRV 220	Surveying Law	2	2	3
		4	11	8
Eighth Semester (Spring)				
SOC 215	Group Processes	3	0	3
SRV 240	Topographic/Site Surveying	2	6	4
SRV 260	Field and Office Practices	1	3	2
		6	9	9
Ninth Semester (Summer)				
SRV 230	Subdivision Planning	1	6	3
Tenth Semester (Fall)				
HUM 115	Critical Thinking	3	0	3
SRV 250	Advanced Surveying	2	6	4
		5	6	7
Program Totals		**46**	**76**	**73**

Machining Technology-Tool, Die and Mold Making

Associate in Applied Science Degree

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
BPR 111	Blueprint Reading II	1	2	2
MAC 111A	Machining Technology I	1	6	3
MAC 151	Machining Calculations	1	2	2
		3	10	7
Second Semester (Spring)				
BPR 121	Blueprint Reading III	1	2	2
COM 231	Public Speaking	3	0	3
MAC 111B	Machining Technology I	1	6	3
		5	8	8
Third Semester (Summer)				
MAC 112A	Machining Technology II	1	4	2
MAC 121	Introduction to CNC	2	0	2
		3	4	4
Fourth Semester (Fall)				
MAC 112B	Machining Technology II	1	8	4
MAC 124	CNC Milling	1	3	2
MAC 152	Advanced Machining Calculations	1	2	2
		3	13	8
Fifth Semester (Spring)				
ENG 111	Expository Writing	3	0	3
MAC 113A	Machining Technology III	1	8	4
MAC 122	CNC Turning	1	3	2
		5	11	9

Sixth Semester (Summer)				
MAC 113B	Machining Technology III	1	4	2
SOC 215	Group Processes	3	0	3
		4	4	5
Seventh Semester (Fall)				
MAC 243	Die Making I	2	6	4
MAT 121	Algebra/Trigonometry I (or PHY 122)	2	2	3
		4	8	7
Eighth Semester (Spring)				
BPR 123	Die/Mold Print Reading	1	3	2
	Humanities Elective	3	0	3
		4	3	5
Ninth Semester (Summer)				
MAC 244	Die Making II	1	9	4
Tenth Semester (Fall)				
MAC 153	Compound Angles	1	2	2
MAC 226	CNC EDM Machining	1	3	2
MEC 141	Introduction to Manufacturing Processes	2	2	3
		4	7	7
Eleventh Semester (Spring)				
MAC 241	Jig and Fixtures I	2	6	4
MAC 245	Mold Construction I	2	6	4
		4	12	8
Twelfth Semester (Summer)				
MAC 246	Mold Construction II	1	9	4
	Program Totals	**41**	**98**	**76**

Welding

Certificate

The following courses give students an understanding of the principles, methods, techniques, and skills essential for successful employment in the welding field and metals industry.

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
WLD 112	Basic Welding Processes	1	3	2
WLD 115	SMAW (Stick) Plate	2	9	5
		3	12	7
Second Semester (Spring)				
WLD 116	SMAW (Stick) Plate	1	9	4
WLD 141	Symbols and Specifications	2	2	3
		3	11	7
Third Semester (Fall)				
WLD 143	Welding Metallurgy	1	2	2

Fourth Semester (Spring)				
WLD 111	Oxy-fuel Welding	1	3	2
Program Totals		**8**	**28**	**18**

Welding Technology
Diploma

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
WLD 110	Cutting Processes	1	3	2
WLD 115	SMAW (Stick) Plate	2	9	5
		3	14	8
Second Semester (Spring)				
MAT 101	Applied Mathematics I (MAT 121 or PHY 122)	2	2	3
WLD 116	SMAW (Stick) Plate/Pipe	1	9	4
WLD 141	Symbols and Specifications	2	2	3
		5	13	10
Third Semester (Summer)				
WLD 121	GMAW (MIG) FCAW/Plate	2	6	4
WLD 262	Inspection and Testing	2	2	3
		4	8	7
Fourth Semester (Fall)				
WLD 122	GMAW (MIG) Plate/Pipe	1	6	3
WLD 131	GTAW (TIG) Plate	2	6	4
WLD 143	Welding Metallurgy	1	2	2
		4	14	9
Fifth Semester (Spring)				
ENG 102	Applied Communications II (or ENG 111)	3	0	3
WLD 261	Certification Practices	1	3	2
		4	3	5
Program Totals		**20**	**52**	**39**

Welding Technology
Associate in Applied Science Degree

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
WLD 110	Cutting Processes	1	3	2
WLD 115	SMAW (Stick) Plate	2	9	5
		3	14	8

Second Semester (Spring)				
PHY 122	Applied Physics II (or MAT 121)	3	2	4
WLD 116	SMAW (Stick) Plate/Pipe	1	9	4
WLD 141	Symbols and Specifications	2	2	3
		6	13	11
Third Semester (Summer)				
WLD 121	GMAW (MIG) FCAW/Plate	2	6	4
WLD 262	Inspection and Testing	2	2	3
		4	8	7
Fourth Semester (Fall)				
WLD 122	GMAW (MIG) Plate/Pipe	1	6	3
WLD 131	GTAW (TIG) Plate	2	6	4
WLD 143	Welding Metallurgy	1	2	2
		4	14	9
Fifth Semester (Spring)				
DFT 119	Basic CAD	1	2	2
ENG 111	Expository Writing	3	0	3
WLD 261	Certification Practices	1	3	2
		5	5	7
Sixth Semester (Summer)				
WLD 111	Oxy-Fuel Welding	1	3	2
WLD 151	Fabrication I	2	6	4
		3	9	6
Seventh Semester (Fall)				
BPR 111	Blueprint Reading I	1	2	2
DFT 111	Technical Drafting I	1	3	2
SOC 215	Group Processes	3	0	3
		5	5	7
Eighth Semester (Spring)				
ENG 114	Professional Research and Reporting	3	0	3
HUM 115	Critical Thinking	3	0	3
MAC 121	Introduction to CNC	2	0	2
MEC 180	Engineering Materials	2	3	3
		10	3	11
Ninth Semester (Summer)				
WLD 132	GTAW (TIG) Plate/Pipe	1	6	3
	Program Totals	**41**	**77**	**69**

Curriculum Requirements for the Associate in Arts (A.A.) Degree

Semester Hrs.

General Education Core Requirements 44

English/Communications 6

English Composition

ENG 111 and 112, 113 or 114 are required.

Humanities/Fine Arts 12

1. One course must be selected from three of the following disciplines: art, dance, drama, foreign languages, interdisciplinary humanities, literature, music, philosophy, and religion.

2. At least one course must be a literature course.
3. COM 231, Public Speaking, is required and is classified as a Humanities/ Fine Arts course, but may not substitute for the literature requirement.

Social/Behavioral Sciences 12

1. Four courses must be selected from at least three of the following disciplines: anthropology, economics, geography, history, political sci ence, psychology, and sociology.
2. At least one course must be a history course.

Natural Science/Mathematics 14

Natural Sciences 8

Select two courses, including accompanying laboratory work, from the biology, chemistry, or physics disciplines.

***Mathematics 6**

1. MAT 161 or higher is required.
2. The other course may be selected from other quantitative subjects.

Other Required Hours 21

1. ACA 115 ..... **1**
2. Additional courses **20**

These include General Education, Pre-Major, and elective courses that have been approved for transfer. **Students should refer to Pre-Major Articulation Agreements before making selections for required hours.**

Recommended Courses

Although these courses are **not required**, they are recommended for all students who have sufficient available credit hours.

Computing 3

CIS 110

Health/Physical Education 3

HEA 110, HEA 120 or PED 110 plus any PED activity course

***Mathematics 1**

MAT 161A or the lab associated with the selected mathematics course.

Total Semester Hours 65

All college transfer courses submitted for graduation require a minimum grade of C.

Associate in Arts Degree

Evening Program Model of Semester Course Sequence*

	Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)			
ACA 115 Freshman Seminar	0	2	1
ENG 111 Expository Writing	3	0	3
MAT 161/161A College Algebra	3	2	4
	6	4	8

Second Semester (Spring)				
CIS 110	Introduction to Computers	2	2	3
ENG 113	Literature-Based Research (or ENG 112)	3	0	3
MAT	Math Elective	3	2	4
	Social/Behavioral Sciences Course	3	0	3
		11	4	13
Third Semester (Fall)				
COM 231	Public Speaking	3	0	3
	Humanities/Fine Arts Course	3	0	3
	Science Course I	3	3	4
		9	3	10
Fourth Semester (Spring)				
ENG	Literature Requirement for Humanities/Fine Arts	3	0	3
	Science Course II	3	3	4
	Social/Behavioral Sciences Course	3	0	3
		9	3	10
Fifth Semester (Fall)				
HIS	History Requirement for Social/Behavioral Sciences	3	0	3
	Humanities/Fine Arts Course	3	0	3
	Elective	3	0	3
	Elective	3	0	3
		12	0	12
Sixth Semester (Spring)				
	Social/Behavioral Sciences Course	3	0	3
	Elective	3	0	3
	Elective	3	0	3
	Elective	3	0	3
		12	0	12
	Program Totals	**59**	**14**	**65**

Health/Physical Education courses may be selected any semester.

Foreign Language courses may be selected in a sequence that meets the requirements of the receiving universities.

*Courses selected may vary according to requirements of the pre-major, senior institution, etc. Course sequence and hours may vary depending on courses selected.

Curriculum requirements for the Associate in Science (A.S.) Degree

Semester Hrs.

General Education Core Requirements 44

English/Communications 6

English Composition

ENG 111 and 112, 113 or 114 are required.

Humanities/Fine Arts 12

1. Two courses must be selected from the following disciplines: art, dance, drama, foreign languages, interdisciplinary humanities, litera ture, music, philosophy, and religion.
2. At least one, but not more than two courses must be a literature course.
3. COM 231, Public Speaking, is required and is classified as a Humanities/ Fine Arts course, but may not substitute for the literature requirement.

Social/Behavioral Sciences 12

1. Four courses must be selected from at least three of the following disciplines:anthropology, economics, geography, history, political science, psychology, and sociology.
2. At least one course must be a history course.

Natural Science/Mathematics 14

Natural Sciences 8

Select a two-course sequence, including accompanying laboratory work, from the biology, chemistry, or physics disciplines.

***Mathematics 6**

1. MAT 171 or higher is required.
2. The other course may be a higher level math course or selected from other quantitative subjects.

OTHER REQUIRED HOURS **21**

1. ACA 115 ..... **1**
2. Mathematics, Natural Sciences, Computer Science, and pre-major courses **14**
   Must include additional mathematics, natural sciences, and/or computer science courses that have been approved for transfer.
   Students should refer to Pre-Major Articulation Agreements before making selections for other required hours. 6

Recommended Courses

Although these courses are **not required**, they are recommended for all students who have sufficient available credit hours.

Computing 3
CIS 110

Health/Physical Education 3
HEA 110, HEA 120 or PED 110 plus any PED activity course

***Mathematics 1**
MAT 171A or the lab associated with the selected mathematics course.

Total Semester Hours **65**

All college transfer courses submitted for graduation require a minimum grade of C.

Associate in Science Degree

Evening Program Model of Semester Course Sequence*

		Hrs. Per Week Class	Lab	Credit Hrs.
First Semester (Fall)				
ACA 115	Freshman Seminar	0	2	1
ENG 111	Expository Writing	3	0	3
MAT 175	Precalculus	4	0	4
	First Science Sequence — Course I	3	3	4
		10	5	12
Second Semester (Spring)				
ENG 113	Literature-Based Research (or ENG 112)	3	0	3
MAT 271	Calculus I	3	2	4
	First Science Sequence — Course II	3	3	4
		9	5	11
Third Semester (Fall)				
CIS 110	Introduction to Computers	2	2	3
COM 231	Public Speaking	3	0	3
MAT 272	Calculus II	3	2	4
	Second Science Sequence — Course I	3	3	4
		11	7	14
Fourth Semester (Spring)				
ENG	Literature Requirement for Humanities/Fine Arts	3	0	3
MAT 285	Calculus III (Elective)	3	0	3
	Second Science Sequence — Course II	3	3	4
	Social/Behavioral Sciences Course	3	0	3
		12	3	13
Fifth Semester (Fall)				
	Humanities/Fine Arts Course	3	0	3
	Humanities/Fine Arts Course	3	0	3
	Social/Behavioral Sciences Course	3	0	3
		9	0	9
Sixth Semester (Spring)				
	History Requirement for Social/Behavioral Sciences	3	0	3
	Social Behavioral Sciences Course	3	0	3
		6	0	6
Program Totals		**57**	**20**	**65**

Health/Physical Education courses may be selected any semester.

Foreign Language courses may be selected in a sequence that meets the requirements of the receiving universities.

*Courses selected may vary according to requirements of the pre-major, senior institution, etc. Course sequence and hours may vary depending on courses selected.

Pre-major Articulation Agreements

Pre-major Articulation Agreements are agreements between the 16 member University of North Carolina system, some private colleges and universities, and the 58 North Carolina Community Colleges. The agreements state that if you follow one of the pre-major programs offered by the college (see list below), have no grade below "C," and are accepted by the senior institution, you will enter as a junior in that major. Pre-major articulation agreements are available from Student Services and academic advisors.

CAUTION: You MUST see your advisor before registering for one of these programs!

Associate in Arts and Associate in Science Degree Pre-major Programs:

Associate in Arts

Art Education
Business Administration
Business Education
Criminal Justice
English
English Education
Health Education
History
Marketing Education
Nursing
Physical Education
Political Science
Psychology
Social Science Secondary Education
Sociology

Associate in Science

Biology
Biology Education
Chemistry
Chemistry Education
Computer Science
Engineering
Mathematics
Mathematics Education

General Occupational Technology

Diploma

This program consists of:	Credit Hrs.
Major courses (see list)	30
General education courses	6
PROGRAM TOTAL	36

		Hrs. Per Week Class	Lab	Credit Hrs.
General Education				
COM 231	Public Speaking	3	0	3
ENG 111	Expository Writing	3	0	3
		6	0	6

Major Hours

BIO	168	Anatomy and Physiology I	3	3	4
BIO	169	Anatomy and Physiology II	3	3	4
CIS	110	Introduction to Computers	2	2	3
OST	131	Keyboarding**	1	2	2
PSY	150	General Psychology	3	0	3
			12	10	16

Other Major Hours* **14**

May include:

(a) any transferrable course with prefix ANT, ART, BIO, CHM, COM, DRA, ENG, GEO, GER, HEA, HIS, HUM, MAT, MUS, PED, PHI, PHY, POL, PSY, REL, SOC, or SPA;

(b) any associate degree-level Allied Health/Public Service Education division course work with prefix BIO, CHM, CJC, COE, DEN, EDU, EMS, FIP, HSE, MLT, NUR, RAD, SAB, or SWK;

(c) any associate degree-level course with prefix ACC, BUS, CIS, ECO, MED, MKT, NET, NUT, OMT, or OST.

Program Total **36**

Courses must be approved by advisor before registration.

*All courses in these lists must have a minimum grade of "C."

**Students will be tested for keyboarding skill prerequisite. If proficient in keyboarding, OST 136, Word Processing, may be taken.

General Occupational Technology
Associate in Applied Science Degree

This program consists of:		Credit Hrs.
Major courses (see list)		49
Related and general education courses including:		16
English/Oral Communications	6	
Humanities/Fine Arts	3	
Natural Sciences/Mathematics	3	
Social Science	3	
PROGRAM TOTAL		65

			Hrs. Per Week Class	Lab	Credit Hrs.
General Education					
ACA	115	Freshman Seminar	0	2	1
COM	231	Public Speaking	3	0	3
ENG	111	Expository Writing	3	0	3
HUM	115	Critical Thinking	3	0	3
MAT	115	Mathematical Models (or a higher math)	2	2	3
SOC	215	Group Processes (or SOC 225 or SOC 240)	3	0	3
			14	4	16

Major Hours

BIO	168	Anatomy and Physiology I	3	3	4
BIO	169	Anatomy and Physiology II	3	3	4
BUS	110	Introduction to Business (or BUS 137)	3	0	3
CIS	110	Introduction to Computers	2	2	3
OST	131	Keyboarding**	1	2	2
PSY	150	General Psychology	3	0	3
			15	10	19

Other Major Hours* **30**

May include:

(a) any transferrable course with prefix ANT, ART, BIO, CHM, COM, DRA, ENG, GEO, GER, HEA, HIS, HUM, MAT, MUS, PED, PHI, PHY, POL, PSY, REL, SOC, or SPA;

(b) any associate degree-level Allied Health/Public Service Education division course work with prefix BIO, CHM, CJC, COE, DEN, EDU, EMS, FIP, HSE, MLT, NUR, RAD, SAB, or SWK;

(c) any associate degree-level course with prefix ACC, BUS, CIS, ECO, MED, MKT, NET, NUT, OMT, or OST.

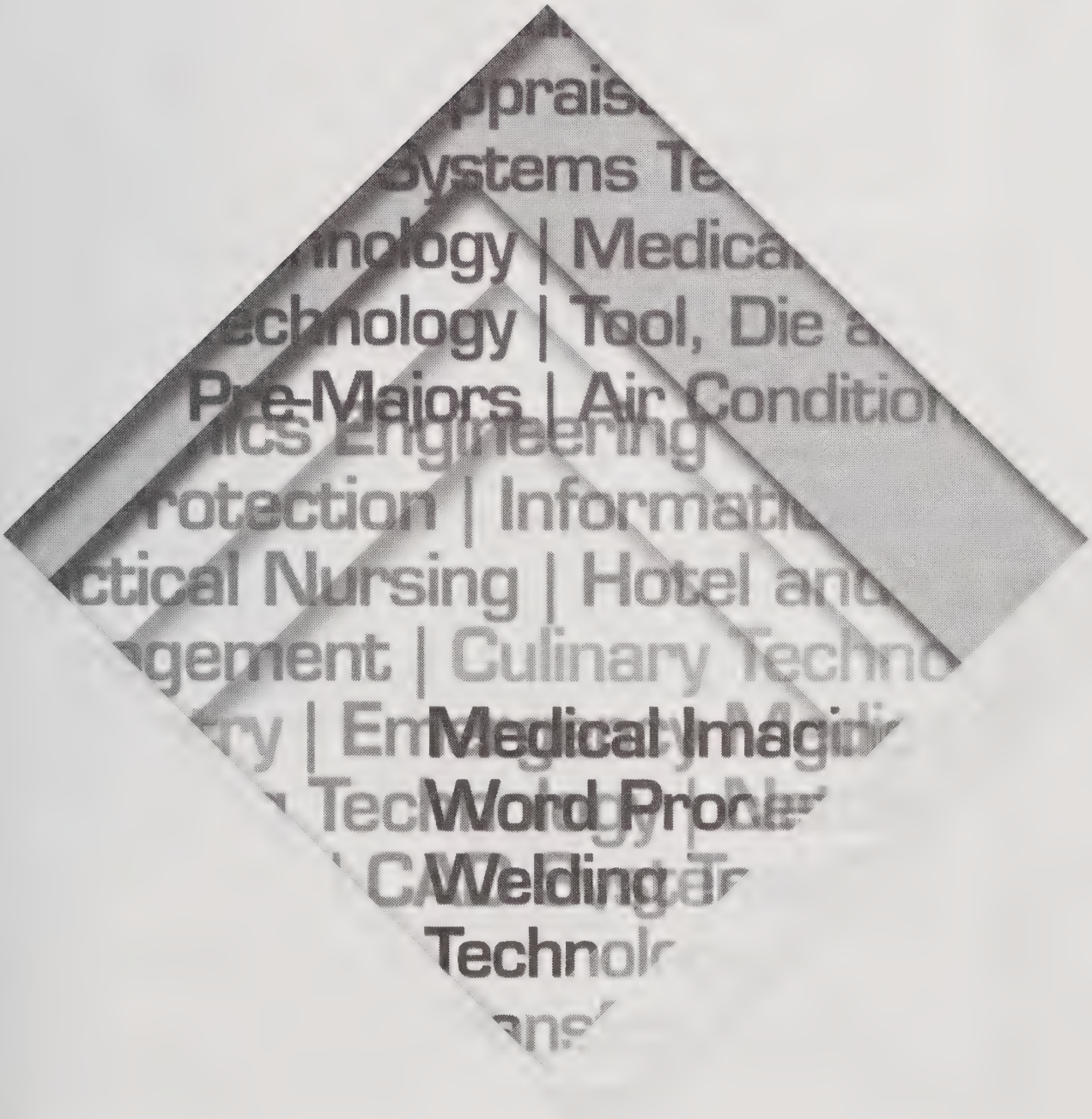
Program Total **65**

Courses must be approved by advisor before registration.

* All courses in these lists must have a minimum grade of "C."

** Students will be tested for keyboarding skill prerequisite. If proficient in keyboarding, OST 136, Word Processing, may be taken.

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PED Physical Education 330
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POL Political Science 338
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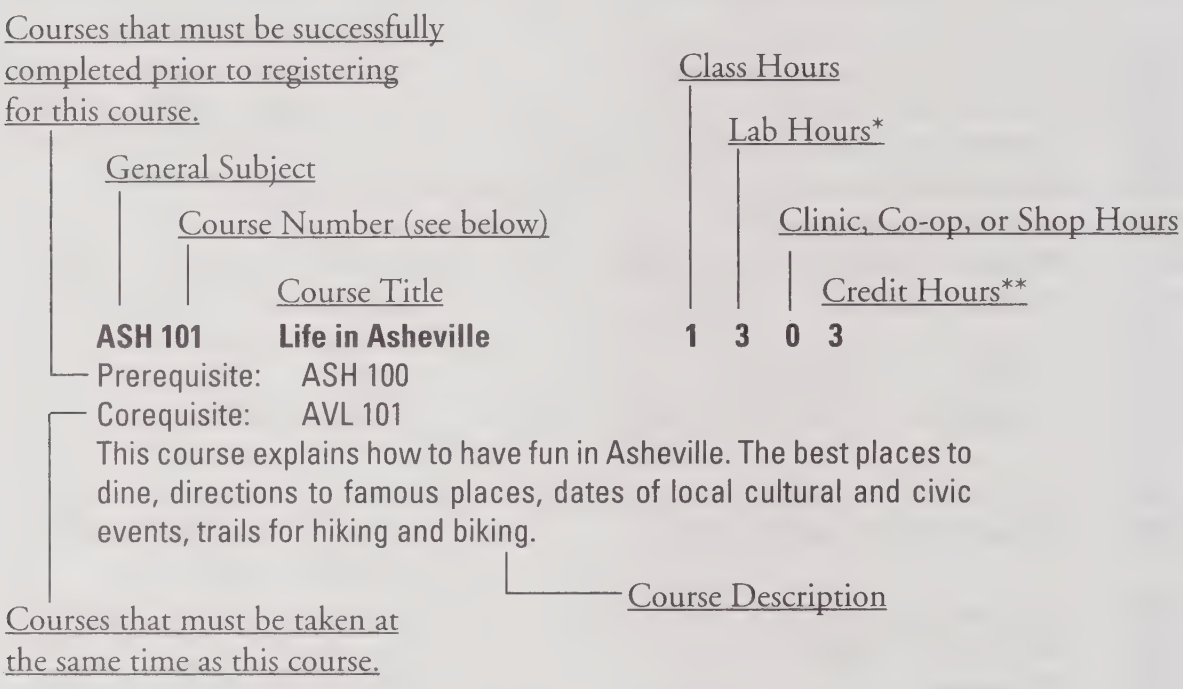
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Course Descriptions

The following section contains descriptions of courses offered by Asheville-Buncombe Technical Community College. The following example explains each component of the course description entry.



** When only three numbers are listed, the middle number always designates Lab Hours.*
*** Credit Hours are always the last number.*

Course Numbers consist of three digits, and numbers are assigned as follows:

- The first digit indicates the year the course is normally taken. A first digit of "0" is used for Guided Studies courses.
- The second digit denotes the credential for which the course is intended:
  100-109 and 200-209: Courses for stand-alone certificate and diploma programs.
  110-189 and 210-289: Courses for associate degree programs; these courses may also be used in certificate and diploma programs.
  190-199 and 290-299: Seminar and Selected Topics courses for all programs.
- The third digit indicates the order in which the course is usually taken.
  Example: ACC 120 Principles of Accounting I
  ACC 121 Principles of Accounting II

Please examine each course description before registering and determine if all prerequisites have been met. Prerequisites shown are those courses that must be successfully completed before attempting further study. In certain cases the department chairperson may waive some prerequisites.

Credit by Examination is not available for courses marked with an asterisk because of the nature of the course and in some cases safety requirements in the use of equipment. Any exceptions must be with the approval of the department chairperson.

Academic Related

ACA 115 Freshman Seminar **0 2 1**
Prerequisites: None
Corequisites: None
This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.

Accounting

ACC 120 Principles Of Accounting I **3 2 4**
Prerequisites: None
Corequisites: None
This course introduces the basic principles and procedures of accounting. Emphasis is placed on collecting, summarizing, analyzing, and reporting financial information. Upon completion, students should be able to analyze data and prepare journal entries and reports as they relate to the accounting cycle. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ACC 121 Principles of Accounting II **3 2 4**
Prerequisites: ACC 120
Corequisites: None
This course is a continuation of ACC 120. Emphasis is placed on corporate and managerial accounting for both external and internal reporting and decision making. Upon completion, students should be able to analyze and record corporate transactions, prepare financial statements and reports, and interpret them for management. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ACC 125 Mathematics of Finance **3 0 3**
Prerequisites: MAT 115
Corequisites: None
This course covers computations necessary in accounting for various business transactions. Emphasis is placed on time value of money concepts and calculations needed for topics such as stocks and bonds, annuities, sinking funds, and amortization. Upon completion, students should be able to make computations necessary in accounting for transactions involving these topics.

ACC 129 Individual Income Taxes **2 2 3**
Prerequisites: ACC 120
Corequisites: None
This course introduces the relevant laws governing individual income taxation. Emphasis is placed on filing status, exemptions for dependents, gross income, adjustments, deductions, and computation of tax. Upon completion, students should be able to complete various tax forms pertaining to the topics covered in the course.

ACC 130 Business Income Taxes **2 2 3**
Prerequisites: ACC 129 or permission of Instructor
Corequisites: None
This course introduces the relevant laws governing business and fiduciary income taxes. Topics include tax depreciation, accounting periods and methods, corporations, partnerships, S corporations, estates and trusts, and gifts. Upon completion, students should be able to complete various tax forms pertaining to the topics covered in the course.

ACC 140 Payroll Accounting **1 2 2**
Prerequisites: ACC 120
Corequisites: None
This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries.

ACC 150 Computerized General Ledger **1 2 2**
Prerequisites: ACC 120
Corequisites: None
This course introduces microcomputer applications related to the major accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting package to solve accounting problems.

ACC 175 Hotel and Restaurant Accounting **3 2 4**
Prerequisites: None
Corequisites: None
This course covers generally accepted accounting principles and the uniform system of accounts for small hotels and motels of the American Hotel and Motel Association. Emphasis is placed on the accounting cycle, analysis of financial statements, and payroll procedures including treatment of tips. Upon completion, students should be able to demonstrate competence in the accounting principles and procedures used in hotels and restaurants.

***ACC 220 Intermediate Accounting I** **3 2 4**
Prerequisites: ACC 121
Corequisites: None
This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and statements and extensive analyses of balance sheet components. Upon completion, students should be able to demonstrate competence in the conceptual framework underlying financial accounting, including the application of financial standards.

***ACC 221 Intermediate Accounting II** **3 2 4**
Prerequisites: ACC 220
Corequisites: None
This course is a continuation of ACC 220. Emphasis is placed on special problems which may include leases, bonds, investments, ratio analyses, present value applications, accounting changes, and corrections. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

ACC 225 Cost Accounting **3 0 3**
Prerequisites: ACC 121
Corequisites: None
This course introduces the nature and purposes of cost accounting as an information system for planning and control. Topics include direct materials, direct labor, factory overhead, process, job order, and standard cost systems. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

ACC 240 Government and Not-for-Profit Accounting **3 0 3**
Prerequisites: ACC 121
Corequisites: None
This course introduces principles and procedures applicable to governmental and not-for-profit organizations. Emphasis is placed on various budgetary accounting procedures and fund accounting. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

***ACC 269 Auditing** **3 0 3**
Prerequisites: ACC 220
Corequisites: None
This course covers the overall framework of the process of conducting audits and investigations. Emphasis is placed on collecting data from working papers, arranging and systematizing the audit, and writing the audit report. Upon completion, students should be able to demonstrate competence in applying the generally accepted auditing standards and the procedures for conducting an audit.

Air Conditioning, Heating, and Refrigeration

***AHR 110 Introduction to Refrigeration** **2 6 5**
Prerequisites: None
Corequisites: AHR 113 (day program) or Dept. Chair approval
This course introduces the basic refrigeration process used in mechanical refrigeration and air conditioning systems. Topics include terminology, safety, and identification and function of components; refrigeration cycle; and tools and instrumentation used in mechanical refrigeration systems. Emphasis will be placed on how refrigeration theory, principles and practice are used in the refrigeration trade. Upon completion, students should be able to identify refrigeration systems and components, explain the refrigeration process, and use the tools and instrumentation of the trade.

***AHR 111 HVACR Electricity** **2 2 3**
Prerequisites: None
Corequisites: None
This course introduces electricity as it applies to HVACR equipment. Emphasis is placed on power sources, interaction of electrical components, wiring of simple circuits, and the use of electrical test equipment. Upon completion, students should be able to demonstrate good wiring practices and the ability to read simple wiring diagrams.

***AHR 112 Heating Technology** **2 4 4**
Prerequisites: None
Corequisites: AHR 111, AHR 120 (day program) or Dept. Chair approval
This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system.

***AHR 113 Comfort Cooling** **2 4 4**
Prerequisites: AHR 110 (evening program) or Dept. Chair approval
Corequisites: AHR 110 (day program) or Dept. Chair approval
This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels. Upon completion, students should be able to use psychometrics, manufacturer specifications, and test instruments to determine proper system operation.

***AHR 114 Heat Pump Technology** **2 4 4**
Prerequisites: AHR 110 or AHR 113 for day program (and AHR 115 for evening program) or Dept. Chair approval
Corequisites: AHR 115 (day program) or Dept. Chair approval
This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

***AHR 115 Refrigeration Systems** **1 3 2**
Prerequisites: AHR 110 for day program (AHR 113 for evening program) or Dept. Chair approval
Corequisites: AHR 114 (day program)
This course introduces refrigeration systems and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. Emphasis will be placed on how refrigeration theory, principles and practice are used in the air conditioning trade. Upon completion, students should be able to assist in installing and testing refrigeration systems and perform simple repairs.

***AHR 120 HVACR Maintenance** **1 3 2**
Prerequisites: None
Corequisites: AHR 112 (day program)
This course introduces the basic principles of industrial air conditioning and heating systems. Emphasis is placed on preventive maintenance procedures for heating and cooling equipment and related components. Emphasis will be placed upon the service and maintenance of heating equipment. Upon completion, students should be able to perform routine preventive maintenance tasks, maintain records, and assist in routine equipment repairs.

***AHR 125 HVAC Electronics** **1 3 2**
Prerequisites: AHR 111 or ELC 111
Corequisites: None
This course introduces the common electronic control components in HVAC systems. Emphasis is placed on identifying electronic components and their functions in HVAC systems and motor-driven control circuits. Upon completion, students should be able to identify components, describe control circuitry and functions, and use test instruments to measure electronic circuit values and identify malfunctions.

***AHR 130 HVAC Controls** **2 2 3**
Prerequisites: AHR 111 or ELC 111
Corequisites: None
This course covers the types of controls found in residential and commercial comfort systems. Topics include electrical and electronic controls, control schematics and diagrams, test instruments, and analysis and troubleshooting of electrical systems. Upon completion, students should be able to diagnose and repair common residential and commercial comfort systems controls.

***AHR 210 Residential Building Code** **1 2 2**
Prerequisites: None
Corequisites: None
This course covers the residential building codes that are applicable to the design and installation of HVAC systems. Topics include current residential codes as applied to HVAC design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of residential building codes that apply to specific areas of the HVAC trade.

***AHR 211 Residential System Design** **2 2 3**
Prerequisites: None
Corequisites: None
This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

***AHR 212 Advanced Comfort Systems** **2 6 4**
Prerequisites: AHR 114, or Department approval
Corequisites: None
This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems. Upon completion, students should be able to test, analyze, and troubleshoot water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pumps. Hydronic (hot water) and steam heating systems will also be studied.

Anthropology

ANT 210 General Anthropology **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the physical, archaeological, linguistic, and ethnological fields of anthropology. Topics include human origins, genetic variations, archaeology, linguistics, primatology, and contemporary cultures. Upon completion, students should be able to demonstrate an understanding of the four major fields of anthropology. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

ANT 220 Cultural Anthropology **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the nature of human culture. Emphasis is placed on cultural theory, methods of fieldwork, and cross-cultural comparisons in the areas of ethnology, language, and the cultural past. Upon completion, students should be able to demonstrate an understanding of basic cultural processes and how cultural data are collected and analyzed. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

ANT 240 Archaeology **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the scientific study of the unwritten record of the human past. Emphasis is placed on the process of human cultural evolution as revealed through archaeological methods of excavation and interpretation. Upon completion, students should be able to demonstrate an understanding of how archaeologists reconstruct the past and describe the variety of past human cultures. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

Art

ART 111 Art Appreciation **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ART 114 Art History Survey I **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the development of art forms from ancient times to the Renaissance. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ART 115 Art History Survey II **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ART 117 Non-Western Art History **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces non-Western cultural perspectives. Emphasis is placed on, but not limited to, African, Oriental, and Oceanic art forms throughout history. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of non-Western social and cultural development. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ART 121 Design I **1 4 3**
Prerequisites: None
Corequisites: None
This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 122 Design II **1 4 3**
Prerequisites: ART 121
Corequisites: None
This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements and organizational principles as applied to mass and space. Upon completion, students should be able to apply three-dimensional design concepts. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 131 Drawing I **0 6 3**
Prerequisites: None
Corequisites: None
This course introduces the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate competence in the use of graphic form and various drawing processes. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 132 Drawing II **0 6 3**
Prerequisites: ART 131
Corequisites: None
This course continues instruction in the language of drawing and the use of various materials. Emphasis is placed on experimentation in the use of drawing techniques, media, and graphic materials. Upon completion, students should be able to demonstrate increased competence in the expressive use of graphic form and techniques. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 135 Figure Drawing I **0 6 3**
Prerequisites: ART *132
Corequisites: None
This course introduces rendering the human figure with various drawing materials. Emphasis is placed on the use of the visual elements, anatomy, and proportion in the representation of the draped and undraped figure. Upon completion, students should be able to demonstrate competence in drawing the human figure. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 171 Computer Art I **0 6 3**
Prerequisites: None
Corequisites: None
This course introduces the use of the computer as a tool for solving visual problems. Emphasis is placed on fundamentals of computer literacy and design through bit-mapped image manipulation. Upon completion, students should be able to demonstrate an understanding of paint programs, printers, and scanners to capture, manipulate, and output images. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 240 Painting I **0 6 3**
Prerequisites: ART 131 or ART 121
Corequisites: None
This course introduces the language of painting and the use of various painting materials. Emphasis is placed on the understanding and use of various painting techniques, media, and color principles. Upon completion, students should be able to demonstrate competence in the use of creative processes directed toward the development of expressive form. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 241 Painting II **0 6 3**
Prerequisites: ART 240
Corequisites: None
This course provides a continuing investigation of the materials, processes, and techniques of painting. Emphasis is placed on the exploration of expressive content using a variety of creative processes. Upon completion, students should be able to demonstrate competence in the expanded use of form and variety. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 244 Watercolor **0 6 3**
Prerequisites: None
Corequisites: None
This course introduces basic methods and techniques used in watercolor. Emphasis is placed on application, materials, content, and individual expression. Upon completion, students should be able to demonstrate a variety of traditional and nontraditional concepts used in watercolor media. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 261 Photography I **1 4 3**
Prerequisites: None
Corequisites: None
This course introduces photographic equipment, theory, and processes. Emphasis is placed on camera operation, composition, darkroom technique, and creative expression. Upon completion, students should be able to successfully expose, develop, and print a well-conceived composition. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 262 Photography II **1 4 3**
Prerequisites: Art 261
Corequisites: None
This course introduces the creative manipulation of alternative photographic materials and processes such as toning, hand coloring, infrared, and multiple exposure. Emphasis is placed on personal vision and modes of seeing. Upon completion, students should be able to create properly exposed images using a variety of photographic materials and processes.

ART 263 Color Photography **0 6 3**
Prerequisites: ART *262
Corequisites: None
This course provides an introduction to the procedures and processes involved in color photography. Emphasis is placed on the study of light, filtration, exposure, and films along with the processing and printing of color negative materials. Upon completion, students should be able to demonstrate an understanding of color principles, theories, and processes by using them creatively in the production of color prints. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ART 281 Sculpture I **0 6 3**
Prerequisites: None
Corequisites: None
This course provides an exploration of the creative and technical methods of sculpture with focus on the traditional processes. Emphasis is placed on developing basic skills as they pertain to three-dimensional expression in various media. Upon completion, students should be able to show competence in a variety of sculptural approaches. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Astronomy

AST 111 Descriptive Astronomy **3 0 3**
Prerequisites: None
Corequisites: AST 111A
This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

AST 111A Descriptive Astronomy Lab **0 2 1**
Prerequisites: None
Corequisites: AST 111
The course is a laboratory to accompany AST 111. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 111 and which provide practical experience. Upon completion, students should be able to demonstrate an understanding of the universe around them. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

Automation Training

***ATR 112 Introduction to Automation** **2 3 3**
Prerequisites: None
Corequisites: MEC 288
This course introduces the basic principles of automated manufacturing and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems.

Automotive

***AUT 110 Introduction to Automotive Technology** **2 2 3**
Prerequisites: None
Corequisites: AUT 115, AUT 151, AUT 152, AUT 161, or Dept. Chair approval
This course covers the basic concepts and terms of automotive technology, workplace safety, North Carolina state inspection, safety and environmental regulations, and use of service information resources. Topics include familiarization with components along with identification and proper use of various automotive hand and power tools. Upon completion, students should be able to describe terms associated with automobiles, identify and use basic tools and shop equipment, and conduct North Carolina safety/emissions inspections.

***AUT 115 Engine Fundamentals** **2 3 3**
Prerequisites: None
Corequisites: None
This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis/repair of automotive engines using appropriate tools, equipment, procedures, and service information.

***AUT 141 Suspension & Steering Systems** **2 4 4**
Prerequisites: None
Corequisites: None
This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair various steering and suspension components, check and adjust various alignment angles, and balance wheels.

***AUT 151 Brake Systems** **2 2 3**
Prerequisites: None
Corequisites: AUT 152
This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

***AUT 152 Brake Systems Lab** **0 2 1**
Prerequisites: None
Corequisites: AUT 151
This course provides a laboratory setting to enhance brake system skills. Emphasis is placed on practical experiences that enhance the topics presented in AUT 151. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 151.

***AUT 161 Electrical Systems** **2 6 4**
Prerequisites: None
Corequisites: None
This course covers basic electrical theory and wiring diagrams, test equipment, and diagnosis/repair/replacement of batteries, starters, alternators, and basic electrical accessories. Topics include diagnosis and repair of battery, starting, charging, lighting, and basic accessory systems problems. Upon completion, students should be able to diagnose, test, and repair the basic electrical components of an automobile.

***AUT 162 Chassis Electrical and Electronics** **2 2 3**
Prerequisites: AUT 161 or Dept. Chair approval
Corequisites: AUT 163 or Dept. Chair approval
This course covers electrical/electronic diagnosis/repair, including wiring diagrams, instrumentation, and electronic/computer-controlled devices and accessories. Topics include interpreting wiring diagrams and diagnosis and repair of chassis electrical and electronic systems. Upon completion, students should be able to read and interpret wiring diagrams and determine/perform needed repairs on chassis electrical and electronic systems.

***AUT 163 Chassis Electrical and Electronics Lab 0 2 1**
Prerequisites: None
Corequisites: AUT 162
This course provides a laboratory setting to enhance chassis electrical and electronic system skills. Emphasis is placed on practical experiences that enhance the topics presented in AUT 162. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 162.

***AUT 171 Heating and Air Conditioning 2 3 3**
Prerequisites: None
Corequisites: None
This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information.

***AUT 181 Engine Performance-Electrical 2 3 3**
Prerequisites: None
Corequisites: AUT 182 or Dept. Chair approval
This course covers the principles, systems, and procedures required for diagnosing and restoring engine performance using electrical/electronics test equipment. Topics include procedures for diagnosis and repair of ignition, emission control, and related electronic systems. Upon completion, students should be able to describe operation of and diagnose/repair ignition/emission control systems using appropriate test equipment and service information.

***AUT 182 Engine Performance-Electrical Lab 0 3 1**
Prerequisites: None
Corequisites: AUT 181
This course provides a laboratory setting to enhance the skills for diagnosing and restoring engine performance using electrical/electronics test equipment. Emphasis is placed on practical experiences that enhance the topics presented in AUT 181. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 181.

***AUT 183 Engine Performance-Fuels 2 3 3**
Prerequisites: Dept. Chair approval
Corequisites: AUT 184 or Dept. Chair approval
This course covers the principles of fuel delivery/management, exhaust/emission systems, and procedures for diagnosing and restoring engine performance using appropriate test equipment. Topics include procedures for diagnosis/repair of fuel delivery/management and emission systems using appropriate service information. Upon completion, students should be able to describe, diagnose, and repair engine fuel delivery/management and emission control systems using appropriate service information and diagnostic equipment.

***AUT 184 Engine Performance-Fuels Lab 0 3 1**
Prerequisites: AUT 161 or Dept. Chair approval
Corequisites: AUT 183 or Dept. Chair approval
This course provides a laboratory setting to enhance the skills for diagnosing and repairing fuel delivery/management and emission systems. Emphasis is placed on practical experiences that enhance the topics presented in AUT 183. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 183.

***AUT 221 Automatic Transmissions** **2 6 4**
Prerequisites: AUT 161 or Dept. Chair approval
Corequisites: None
This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair automatic drive trains.

***AUT 231 Manual Drive Trains/Axles** **2 3 3**
Prerequisites: AUT 161 or Dept. Chair approval
Corequisites: AUT 232 or Dept. Chair approval
This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, drive shafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory and diagnose and repair manual drive trains.

***AUT 232 Manual Drive Trains/Axles Lab** **0 3 1**
Prerequisites: None
Corequisites: AUT 231
This course provides a laboratory setting to enhance the skills for diagnosing and repairing manual transmissions/transaxles, clutches, drive shafts, axles, and final drives. Emphasis is placed on practical experiences that enhance the topics presented in AUT 231. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in AUT 231.

Biology

BIO 106 Introduction to Anatomy/Physiology/Microbiology **2 2 3**
Prerequisites: None
Corequisites: None
This course covers the fundamental and principle concepts of human anatomy and physiology and microbiology. Topics include an introduction to the structure and function of cells, tissues, and human organ systems, and an overview of microbiology, epidemiology, and control of microorganisms. Upon completion, students should be able to identify structures and functions of the human body and describe microorganisms and their significance in health and disease. *This is a certificate and diploma level course.*

BIO 110 Principles of Biology **3 3 4**
Prerequisites None
Corequisites: None
This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

BIO 111 General Biology I **3 3 4**
Prerequisites None
Corequisites: None
This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, cell structure and function, metabolism and energy transformation, genetics, evolution, classification, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

BIO 112 General Biology II **3 3 4**
Prerequisites: BIO 111
Corequisites: None
This course is a continuation of BIO 111. Emphasis is placed on organisms, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

BIO 120 Introductory Botany **3 3 4**
Prerequisites: BIO 110 or BIO 111
Corequisites: None
This course provides an introduction to the classification, relationships, structure, and function of plants. Topics include reproduction and development of seed and non-seed plants, levels of organization, form and function of systems, and a survey of major taxa. Upon completion, students should be able to demonstrate comprehension of plant form and function, including selected taxa of both seed and non-seed plants. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

BIO 130 Introductory Zoology **3 3 4**
Prerequisites: BIO 110 or BIO 111
Corequisites: None
This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

BIO 143 Field Biology Minicourse **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces the biological and physical components of a field environment. Emphasis is placed on a local field environment with extended field trips to other areas. Upon completion, students should be able to demonstrate an understanding of the biological and physical components of the specific biological environment. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 145 Ecology **3 3 4**
Prerequisites: BIO 110 or BIO 111
Corequisites: None
This course provides an introduction to ecological concepts using an ecosystems approach. Topics include energy flow, nutrient cycling, succession, population dynamics, community structure, and other related topics. Upon completion, students should be able to demonstrate comprehension of basic ecosystem structure and dynamics. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 146 Regional Natural History **3 3 4**
Prerequisites: None
Corequisites: None
This course is an interdisciplinary and historical analysis of the natural resources of the region. Emphasis is placed on geology, climate, forest systems, watersheds, water resources, and fish and wildlife resources of the region. Upon completion, students should be able to demonstrate comprehension of the natural history and the integration of the natural resources of the region. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 163 Basic Anatomy and Physiology **4 2 5**
Prerequisites: None
Corequisites: None
This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 168 Anatomy and Physiology I **3 3 4**
Prerequisites: None
Corequisites: None
This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytology, histology, and the integumentary, skeletal, muscular, nervous, special senses, and endocrine systems. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 169 Anatomy and Physiology II **3 3 4**
Prerequisites: BIO 168
Corequisites: None
This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 175 General Microbiology 2 2 3
Prerequisites: BIO 110, BIO 163, BIO 166, or BIO 169
Corequisites: None
This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 180 Biological Chemistry 2 2 3
Prerequisites: BIO 111 and BIO 112 or BIO 168 and BIO 169 or BIO 175
Corequisites: None
This course provides an introduction to basic biochemical processes in living systems. Topics include properties of carbohydrates, lipids, proteins, nucleic acids, vitamins, and buffers, with emphasis on biosynthesis, degradation, function, and equilibrium. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical concepts. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 223 Field Botany 2 3 3
Prerequisites: BIO 112
Corequisites: None
This course provides a field and laboratory study of local flora. Emphasis is placed on local flora classification, identification, and ecology by the use of keys and field studies. Upon completion, students should be able to use keys for the classification and identification of local flora and to demonstrate an understanding of plant ecology. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 224 Local Flora Spring 1 2 2
Prerequisites: None
Corequisites: None
This course provides an introduction to the identification of native plants. Emphasis is placed on spring wild flowers. Upon completion, students should be able to identify a variety of spring wild flowers and native plants. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 225 Local Flora Summer 1 2 2
Prerequisites: None
Corequisites: None
This course provides an introduction to the identification of native plants. Emphasis is placed on summer wild flowers. Upon completion, students should be able to identify a variety of summer wild flowers and native plants. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 226 Local Flora Fall **1 2 2**
Prerequisites: None
Corequisites: None
This course provides an introduction to the identification of native plants. Emphasis is placed on fall wild flowers. Upon completion, students should be able to identify a variety of fall wild flowers and native plants. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 243 Marine Biology **3 3 4**
Prerequisites: BIO 110 or BIO 111
Corequisites: None
This course covers the physical and biological components of the marine environment. Topics include major habitats, the diversity of organisms, their biology and ecology, marine productivity, and the use of marine resources by humans. Upon completion, students should be able to identify various marine habitats and organisms and to demonstrate a knowledge of their biology and ecology.

BIO 250 Genetics **3 3 4**
Prerequisites: BIO 112
Corequisites: None
This course covers principles of prokaryotic and eukaryotic cell genetics. Emphasis is placed on the molecular basis of heredity, chromosome structure, patterns of Mendelian and non-Mendelian inheritance, evolution, and biotechnological applications. Upon completion, students should be able to recognize and describe genetic phenomena and demonstrate knowledge of important genetic principles. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BIO 275 Microbiology **3 3 4**
Prerequisites: BIO 110, BIO 112, BIO 163, BIO 165, or BIO 168
Corequisites: None
This course covers principles of microbiology and the impact these organisms have on man and the environment. Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Blueprint Reading

BPR 111 Blueprint Reading **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces the basic principles of blueprint reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic blueprints and visualize the features of a part.

BPR 121 Blueprint Reading: Mechanical **1 2 2**
Prerequisites: BPR 111 or MAC 131
Corequisites: None
This course covers the interpretation of intermediate blueprints. Topics include tolerancing, auxiliary views, sectional views, and assembly drawings. Upon completion, students should be able to read and interpret a mechanical working drawing.

BPR 123 Die/Mold Print Reading **1 3 2**
Prerequisites: BPR 121 or MAC 132
Corequisites: None
This course covers differences between production drawings and tooling drawings as they relate to stamping dies and plastic molding. Emphasis is placed on the layout of assembly drawings in tooling and their related detail prints. Upon completion, students should be able to identify individual tooling components and their relationships on a blueprint.

BPR 130 Blueprint Reading/Construction **1 2 2**
Prerequisites: None
Corequisites: None
This course covers the interpretation of blueprints and specifications that are associated with the construction trades. Emphasis is placed on interpretation of details for foundations, floor plans, elevations, and schedules. Upon completion, students should be able to read and interpret a set of construction blueprints.

BPR 135 Schematics and Diagrams **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces schematics and diagrams used in a variety of occupations. Topics include interpretation of wiring diagrams, assembly drawings, exploded views, sectional drawings, and service manuals, specifications, and charts. Upon completion, students should be able to research and locate components and assemblies denoting factory specifications and requirements from service and repair manuals.

Business Administration

BUS 110 Introduction to Business **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BUS 115 Business Law I **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

BUS 116 Business Law II **3 0 3**
Prerequisites: BUS 115
Corequisites: None
This course continues the study of ethics and business law. Emphasis is placed on bailments, sales, risk-bearing, forms of business ownership, and copyrights. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.

BUS 135 Principles of Supervision **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the basic responsibilities and duties of the supervisor and his/her relationship to higher-level supervisors, subordinates, and associates. Emphasis is placed on effective utilization of the work force and understanding the role of the supervisor. Upon completion, students should be able to apply supervisory principles in the workplace.

***BUS 137 Principles of Management** **3 0 3**
Prerequisites: None
Corequisites: None
This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management.

BUS 147 Business Insurance **3 0 3**
Prerequisites: None
Corequisites: None
This course surveys the basic concepts of risk management. Topics include principles and applications of health, property, life, and casualty insurance. Upon completion, students should be able to evaluate different insurance needs and assist an organization in acquiring adequate insurance coverage.

BUS 153 Human Resources Management **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.

BUS 225 Business Finance **2 2 3**
Prerequisites: ACC 120 and ACC 125
Corequisites: None
This course provides an overview of business financial management. Emphasis is placed on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management.

BUS 230 Small Business Management **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the challenges of entrepreneurship including the start-up and operation of a small business. Topics include market research techniques, feasibility studies, site analysis, financing alternatives, and managerial decision making. Upon completion, students should be able to develop a small business plan.

***BUS 239 Business Applications Seminar 1 2 2**
Prerequisites: ACC 120, BUS 115, BUS 137, either ECO 151, 251 or 252, and MKT 120
Corequisites: None
This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the techniques, processes, and vital professional skills needed in the workplace.

BUS 240 Business Ethics 3 0 3
Prerequisites: None
Corequisites: None
This course introduces contemporary and controversial ethical issues that face the business community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students should be able to demonstrate an understanding of their moral responsibilities and obligations as members of the work force and society.

BUS 260 Business Communication 3 0 3
Prerequisites: ENG 111 and OST 080 or OST 131
Corequisites: None
This course is designed to develop skills in writing business communications. Emphasis is placed on business reports, correspondence, and professional presentations. Upon completion, students should be able to communicate effectively in the workplace.

BUS 270 Professional Development 3 0 3
Prerequisites: None
Corequisites: None
This course provides basic knowledge of self-improvement techniques as related to success in the professional world. Topics include positive human relations, job-seeking skills, and projecting positive self-image. Upon completion, students should be able to demonstrate competent personal and professional skills necessary to get and keep a job.

Cabinetmaking

CAB 111 Cabinetmaking I 4 9 7
Prerequisites: None
Corequisites: None
This course introduces wood technology, materials, purchasing, estimating, design considerations, and cabinet construction. Topics include wood identification and use, hand tools, safe machine operation, glue and clamping, abrasives, wood joinery, kitchen and bath layout, laminates, and finishing techniques. Upon completion, students should be able to select and process materials; make sound production decisions; and design, lay out, construct, and install cabinets. This is a diploma-level course.

Carpentry

CAR 110 Introduction to Carpentry **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the student to the carpentry trade. Topics include duties of a carpenter, hand and power tools, building materials, construction methods, and safety. Upon completion, students should be able to identify hand and power tools, common building materials, and basic construction methods.

CAR 111 Carpentry I **3 15 8**
Prerequisites: None
Corequisites: None
This course introduces the theory and construction methods associated with the building industry, including framing, materials, tools, and equipment. Topics include safety, hand/power tool use, site preparation, measurement and layout, footings and foundations, construction framing, and other related topics. Upon completion, students should be able to safely lay out and perform basic framing skills with supervision. This is a diploma-level course.

CAR 112 Carpentry II **3 15 8**
Prerequisites: CAR 111
Corequisites: None
This course covers the advanced theory and construction methods associated with the building industry including framing and exterior finishes. Topics include safety, hand/power tool use, measurement and layout, construction framing, exterior trim and finish, and other related topics. Upon completion, students should be able to safely frame and apply exterior finishes to a residential building with supervision. This is a diploma-level course.

CAR 113 Carpentry III **3 9 6**
Prerequisites: CAR 111
Corequisites: None
This course covers interior trim and finishes. Topics include safety, hand/power tool use, measurement and layout, specialty framing, interior trim and finishes, cabinetry, and other related topics. Upon completion, students should be able to safely install various interior trim and finishes in a residential building with supervision. This is a diploma-level course.

CAR 115 Residential Planning/Estimating **3 0 3**
Prerequisites: BPR 130
Corequisites: None
This course covers project planning, management, and estimating for residential or light commercial buildings. Topics include planning and scheduling, interpretation of working drawings and specifications, estimating practices, and other related topics. Upon completion, students should be able to perform quantity take-offs and cost estimates.

Computer Engineering Technology

CET 111 Computer Upgrade/Repair I **2 3 0 3**
Prerequisites: None
Corequisites: None
This course is the first of two courses covering repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics include safety practices, CPU/memory/bus identification, disk subsystem, hardware/software installation/configuration, common device drivers, data recovery, system maintenance, and other related topics. Upon completion, students should be able to safely repair and/or upgrade computer systems to perform within specifications.

CET 211 Computer Upgrade/Repair II **2 3 0 3**
Prerequisites: CET 111
Corequisites: None
This course is the second of two courses covering repairing, servicing, and upgrading computers and peripherals in preparation for industry certification. Topics include resolving resource conflicts and system bus specifications, configuration and troubleshooting peripherals, operating system configuration and optimization, and other related topics. Upon completion, students should be able to identify and resolve system conflicts and optimize system performance.

CET 212 Integrated Manufacturing Systems **1 3 2**
Prerequisites: ELN 237
Corequisites: None
This course covers computer topics related to integrated manufacturing systems common to current manufacturing facilities. Topics include robot programming, automated control systems, PLCs, data communication, and networking in an integrated manufacturing environment, and other related topics. Upon completion, students should be able to program robots using teaching pendants and troubleshoot and maintain network installations related to integrated manufacturing systems.

CET 293 Special Topics

Chemistry

CHM 092 Fundamentals of Chemistry **3 2 4**
Prerequisites: None
Corequisites: None
This course covers fundamentals of chemistry with laboratory applications. Topics include measurements, matter, energy, atomic theory, bonding, molecular structure, nomenclature, balancing equations, stoichiometry, solutions, acids and bases, gases, and basic organic chemistry. Upon completion, students should be able to understand and apply basic chemical concepts and demonstrate basic laboratory skills necessary for success in college-level science courses.

CHM 121 Foundations of Chemistry **3 0 3**
Prerequisites: None
Corequisites: CHM 121A
This course is designed for those who have no previous high school chemistry or a grade of C or less in high school chemistry. Topics include matter, structure of the atom, nomenclature, chemical equations, bonding and reactions; mathematical topics include measurements, scientific notation, and stoichiometry. Upon completion, students should be able to demonstrate an understanding of chemical concepts and an ability to solve related problems in subsequent chemistry courses.

CHM 121A Foundations of Chemistry Laboratory **0 2 1**
Prerequisites: None
Corequisites: CHM 121
This course is a laboratory for CHM 121. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 121. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 121.

CHM 130 General, Organic, and Biochemistry **3 0 3**
Prerequisites: High school chemistry or CHM 121 and CHM 121A
Corequisites: CHM 130A
This course provides a survey of basic facts and principles of general, organic, and biochemistry. Topics include measurement, molecular structure, nuclear chemistry, solutions, acid-base chemistry, gas laws, and the structure, properties, and reactions of major organic and biological groups. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CHM 130A General, Organic, and Biochemistry Lab **0 2 1**
Prerequisites: None
Corequisites: CHM 130
This course is a laboratory for CHM 130. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 130. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 130. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CHM 132 Organic and Biochemistry **3 3 4**
Prerequisites: CHM 151
Corequisites: None
This course provides a survey of major functional classes of compounds in organic and biochemistry. Topics include structure, properties, and reactions of the major organic and biological molecules and basic principles of metabolism. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts needed to pursue studies in related professional fields. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

CHM 135 Survey of Chemistry I **3 2 4**
Prerequisites: None
Corequisites: None
This course provides an introduction to inorganic chemistry. Emphasis is placed on measurement, atomic structure, bonding, molecular geometry, nomenclature, reactions, the mole concept, stoichiometric calculations, states of matter, and the gas laws. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This introductory course series to chemistry emphasizes the practical impact of chemistry and scientific reasoning on society. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

CHM 136 Survey of Chemistry II **3 2 4**
Prerequisites: CHM 135
Corequisites: None
This course is a continuation of CHM 135 with further study of inorganic reactions and an introduction to organic, biological, and nuclear chemistry. Topics include solutions, acid-base theory, redox reactions, chemical kinetics, organic chemistry, biochemistry, and nuclear chemistry. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This introductory course series to chemistry emphasizes the practical impact of chemistry and scientific reasoning on society. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

CHM 151 General Chemistry I **3 3 4**
Prerequisites: High school chemistry or CHM 121 and CHM 121A
Corequisites: MAT 161 OR MAT 171
This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermochemistry, gas laws, and solutions. Upon completion, students should be able to demonstrate an understanding of fundamental chemical laws and concepts as needed in CHM 152. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

CHM 152 General Chemistry II **3 3 4**
Prerequisites: CHM 151
Corequisites: None
This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

CHM 251 Organic Chemistry I **3 3 4**
Prerequisites: CHM 152
Corequisites: None
This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CHM 252 Organic Chemistry II **3 3 4**
Prerequisites: CHM 251
Corequisites: None
This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CHM 261 Quantitative Analysis **2 6 4**
Prerequisites: CHM 152
Corequisites: None
This course introduces classical methods of chemical analysis with an emphasis on laboratory techniques. Topics include statistical data treatment; stoichiometric and equilibrium calculations; and titrimetric, gravimetric, acid-base, oxidation-reduction, and complexometric methods. Upon completion, students should be able to perform classical quantitative analytical procedures. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CHM 265 Instrumental Analysis **2 6 4**
Prerequisites: CHM 251
Corequisites: None
This course introduces modern instrumental and chromatographic methods. Topics include methods of chromatographic, spectral, and electrochemical analysis which will provide theory of instrumentation, interpretation, and statistical evaluation of analytical data with practical applications. Upon completion, students should be able to perform quantitative analytical procedures using modern instrumentation. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CHM 271 Biochemical Principles **3 0 3**
Prerequisites: CHM 252
Corequisites: None
The course covers fundamental principles of biochemistry. Topics include structures, properties, reactions, and mechanisms of biomacromolecules including amino acids, peptides, proteins, carbohydrates and nucleic acids, enzymatic metabolic pathways, and biochemical genetics. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical processes. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

Information Systems

CIS 110 Introduction to Computers **2 2 3**
Prerequisites: Tested computer keyboarding proficiency
Corequisites: None
This course provides an introduction to computers and computing. Topics include the impact of computers on society, ethical issues, and hardware/software applications, including spreadsheets, databases, word processors, graphics, the Internet, and operating systems. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. A popular business suite of application software will be used. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.*

CIS 111 Basic PC Literacy **1 2 2**
Prerequisites: Tested computer keyboarding proficiency
Corequisites: None
This course provides a brief overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and workplace use. Upon completion, students should be able to demonstrate basic personal computer skills. *This course is intended for those who have not received credit for CIS 110.*

CIS 113 Computer Basics **0 2 1**
Prerequisite: Tested computer keyboarding proficiency
Corequisites: None
This course introduces basic computer usage for non-computer majors. Emphasis is placed on developing basic personal computer skills. Upon completion, students should be able to demonstrate competence in basic computer applications sufficient to use computer-assisted instructional software.

CIS 115 Introduction to Programming and Logic **2 2 3**
Prerequisites: MAT 070
Corequisites: None
This course introduces computer programming and problem solving in a programming environment, including an introduction to operating systems, text editor, and a language translator. Topics include language syntax, data types, program organization, problem-solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.*

CIS 120 Spreadsheet I **2 2 3**
Prerequisites: CIS 110 or CIS 111 and basic math course or placement test
Corequisites: None
This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts.

CIS 125 CORE Integrated Software **2 2 3**
Prerequisites: CIS 110
Corequisites: None
This course instructs the student in the CORE Windows or Linux based program suites for word processing, spreadsheet, database, and presentation software. Emphasis is placed on CORE level development of database, spreadsheet, word processing, and presentation applications to utilize data sharing. Upon completion, each student will demonstrate competencies using business simulations which employ data sharing among the database, spreadsheet, word processing, and presentation software.

CIS 130 Survey of Operating Systems **2 3 3**
Prerequisites: None
Corequisites: None
The course covers operating system concepts which are necessary for maintaining and using computer systems. Topics include disk, file, and directory structures; installation and setup; resource allocation, optimization, and configuration; system security; and other related topics. Upon completion, students should be able to install and configure operating systems and optimize performance.

CIS 145 Operating System — Single User **2 2 3**
Prerequisites: CIS 110 or CIS 111
Corequisites: CIS 130
This course introduces operating systems concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions at the support level in a single-user environment.

CIS 152 Database Concepts and Applications **2 2 3**
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course introduces database design and creation using a database management systems product. Topics include database terminology, usage in industry, design theory, types of DBMS models, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to create simple database tables, queries, reports, and forms which follow acceptable design practices.

CIS 155 Database Theory/Analysis **2 2 3**
Prerequisites: CIS 152
Corequisites: None
This course introduces database design theories and analyses. Emphasis is placed on data dictionaries, normalization, data integrity, and data modeling. Upon completion, students should be able to design normalized database structures that exhibit data integrity.

CIS 157 Database Programming I **2 2 3**
Prerequisites: CIS 152 and CSC 139
Corequisites: None
This course is designed to develop programming proficiency in a selected DBMS. Emphasis is placed on the Data Definition Language (DDL) and Data Manipulation Language (DML) of the DBMS as well as on report generation. Upon completion, students should be able to write programs which create, update, and produce reports representative of industry requirements.

CIS 163 Program Interfaces Internet **2 2 3**
Prerequisites: CIS 110 or CIS 111, and CIS 115
Corequisites: None
This course creates interactive multimedia applications and applets for the Internet using web-specific languages. Emphasis is placed on audio, video, graphic, and network resources and various file formats. Upon completion, students should be able to create an interactive multimedia application or applet for the Internet.

CIS 165 Desktop Publishing I **2 2 3**
Prerequisites: CIS 110 and either OST 136 or CIS 125
Corequisites: None
This course provides an introduction to desktop publishing software capabilities. Emphasis is placed on efficient use of a page layout software package to create, design, and print publications; hardware/software compatibility; and integration of specialized peripherals. Upon completion, students should be able to prepare publications given design specifications.

CIS 170 Technical Support Functions I **2 2 3**
Prerequisites: CIS 115, CIS 152, and CIS 217
Corequisites: None
This course introduces a variety of diagnostic and instructional tools that are used to evaluate the performance of technical support technologies. Emphasis is placed on technical support management techniques, support technologies and on Help Desk services to support users of computing technologies. Upon completion, students should be able to determine the best technologies to support and solve actual technical support problems.

CIS 215 Hardware Installation and Maintenance **2 3 3**
Prerequisites: CIS 110 and CIS 130
Corequisites: None
This course covers the basic hardware of a personal computer, including operations and interactions with software. Topics include component identification, the memory system, peripheral installation and configuration, preventive maintenance, and diagnostics and repair. Upon completion, students should be able to select appropriate computer equipment, upgrade and maintain existing equipment, and troubleshoot and repair non-functioning personal computers.

***CIS 226 Trends in Technology** **1 2 2**
Prerequisites: CIS 110 and second year status
Corequisites: None
This course introduces emerging information systems technologies. Emphasis is placed on evolving technologies and trends in business and industry. Upon completion, students should be able to articulate an understanding of the current trends and issues in emerging technologies for information systems.

CIS 236 A+ Certification Preparation **2 2 3**
Prerequisites: CIS 215
Corequisites: None
This course is designed to prepare students for the A+ Hardware certification exam. Topics include portable computer systems, installing and troubleshooting printers, basic networking concepts and procedures, testing electrical components, using diagnostics utilities, and achieving customer satisfaction. Upon completion, students should be able to repair portable systems and printers, understand basic networking, and use utilities and voltmeters to test computer components.

CIS 286 Systems Analysis and Design **3 0 3**
Prerequisites: CIS 110, CIS 115, and CIS 152
Corequisites: None
This course examines established and evolving methodologies for the analysis, design, and development of a business information system. Emphasis is placed on business systems characteristics, managing information systems projects, prototyping, CASE tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques.

***CIS 288 Systems Project** **1 4 3**
Prerequisites: CIS 286 and second year status
Corequisites: ENG 114
This course provides an opportunity to complete a significant systems project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, Information Systems students should be able to complete a project from the definition phase through implementation.

***CIS 292 Selected Topics in Information Systems** **1 3 2**
Prerequisites: CIS 110 and second year status
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Workplace issues of computer professionals will be examined.

Civil Engineering

CIV 110 Statics/Strength of Materials **2 6 4**
Prerequisites: MAT 121
Corequisites: None
This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. Topics include resultants and components of forces, moments and couples, free-body diagrams, shear and moment diagrams, trusses, frames, beams, columns, connections, and combined stresses. Upon completion, students should be able to analyze simple structures.

CIV 111 Soils and Foundations **2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to perform basic soil tests and analyze engineering properties of soil.

CIV 125 Civil/Surveying CAD **1 6 3**
Prerequisites: CIS 111, EGR 115, and SRV 110
Corequisites: None
This course introduces civil/surveying computer-aided drafting (CAD) software. Topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software.

CIV 210 Engineering Materials **1 3 2**
Prerequisites: None
Corequisites: None
This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. Topics include cementing agents and aggregates; water and admixtures; proportioning, production, placing, consolidation, and curing; and inspection methods. Upon completion, students should be able to proportion concrete mixes to attain predetermined strengths and other properties and perform standard control tests.

CIV 211 Hydraulics and Hydrology **2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. Topics include precipitation and runoff, fluid statics and dynamics, flow measurement, and pipe and open channel flow. Upon completion, students should be able to analyze and size drainage structures

CIV 212 Environmental Planning **2 3 3**
Prerequisites: CIV 211
Corequisites: None
This course covers water and wastewater technology, erosion and sedimentation control, and other related topics. Topics include collection, treatment, and distribution of water and wastewater and erosion and sedimentation control law. Upon completion, students should be able to demonstrate knowledge of water and wastewater systems and prepare erosion and sedimentation control plans.

CIV 215 Highway Technology **1 3 2**
Prerequisites: SRV 111
Corequisites: CIV 211
This course introduces the essential elements of roadway components and design. Topics include subgrade and pavement construction, roadway drawings and details, drainage, superelevation, and N.C. Department of Transportation Standards. Upon completion, students should be able to use roadway drawings and specifications to develop superelevation, drainage, and general highway construction details.

CIV 220 Basic Structural Concepts **1 3 2**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course covers the historical perspective of structures as well as types, materials, common elements, and mechanical principles of structures. Topics include basic structure shapes, advantages and disadvantages of standard building materials, application of structural concepts, and other related topics. Upon completion, students should be able to demonstrate an understanding of basic structural concepts.

CIV 221 Steel and Timber Design **2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course introduces the basic elements of steel and timber structures. Topics include the analysis and design of steel and timber beams, columns, and connections and the use of appropriate manuals and codes. Upon completion, students should be able to analyze, design, and draw simple steel and timber structures.

CIV 222 Reinforced Concrete **2 3 3**
Prerequisites: CIV 110 or MEC 250
Corequisites: None
This course introduces the basic elements of reinforced concrete and masonry structures. Topics include analysis and design of reinforced concrete beams, slabs, columns, footings, and retaining walls; load-bearing masonry walls; and ACI manuals and codes. Upon completion, students should be able to analyze and design components of a structure using reinforced concrete and masonry elements and utilize appropriate ACI publications.

CIV 230 Construction Estimating **2 3 3**
Prerequisites: CIS 111 and EGR 115
Corequisites: None
This course covers quantity take-offs of labor, materials, and equipment and calculation of direct and overhead costs for a construction project. Topics include the interpretation of working drawings and specifications, types of contracts and estimates, building codes, bidding techniques and procedures, and estimating software. Upon completion, students should be able to prepare a detailed cost estimate and bid documents for a construction project.

CIV 240 Project Management **2 3 3**
Prerequisites: EGR 115
Corequisites: None
This course introduces construction planning and scheduling techniques and project management software. Topics include construction safety, operation analysis, construction scheduling, construction control systems, claims and dispute resolutions, project records, and documentation. Upon completion, students should be able to demonstrate an understanding of the roles of construction project participants, maintain construction records, and prepare construction schedules.

CIV 250 Civil Engineering Technology Project **1 3 2**
Prerequisites: Successful completion of three semesters of the Civil Engineering Technology program
Corequisites: None
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Upon completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects.

Criminal Justice

CJC 100 Basic Law Enforcement Training **8 30 18**
Prerequisites: RED 090
Corequisites: None
This course covers the skills and knowledge needed for entry-level employment as a law enforcement officer in North Carolina. Emphasis is placed on topics and areas as defined by the North Carolina Administrative Code. Upon completion, students should be able to demonstrate competence in the topics and areas required for the state comprehensive examination. *This is a certificate-level course.*

CJC 111 Introduction to Criminal Justice 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CJC 112 Criminology 3 0 3
Prerequisites: None
Corequisites: None
This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.

CJC 113 Juvenile Justice 3 0 3
Prerequisites: None
Corequisites: None
This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/ procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.

CJC 114 Investigative Photography 1 2 2
Prerequisites: None
Corequisites: None
This course covers the operation of various photographic equipment and its application to criminal justice. Topics include using various cameras, proper exposure of film, developing film/prints, and preparing photographic evidence. Upon completion, students should be able to demonstrate and explain the role of photography and proper film exposure and development techniques.

CJC 121 Law Enforcement Operations 3 0 3
Prerequisites: None
Corequisites: None
This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations. There will be an emphasis on practical skills. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CJC 122 Community Policing 3 0 3
Prerequisites: None
Corequisites: None
This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing.

CJC 131 Criminal Law **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements. There will be an emphasis on North Carolina law.

CJC 132 Court Procedure and Evidence **3 0 3**
Prerequisites: None
Corequisites: None
This course covers judicial structure/process, procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence.

CJC 141 Corrections **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the history, major philosophies, components, and current practices and problems of the field of corrections. Topics include historical evolution, functions of the various components, alternatives to incarceration, treatment programs, inmate control, and other related topics. Upon completion, students should be able to explain the various components, processes, and functions of the correctional system. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

CJC 151 Introduction to Loss Prevention **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the concepts and methods related to commercial and private security systems. Topics include the historical, philosophical, and legal basis of security, with emphasis on security surveys, risk analysis, and associated functions. Upon completion, students should be able to demonstrate and understand security systems, risk management, and the laws relative to loss prevention.

CJC 211 Counseling **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the basic elements of counseling and specific techniques applicable to the criminal justice setting. Topics include observation, listening, recording, interviewing, and problem exploration necessary to form effective helping relationships. Upon completion, students should be able to discuss and demonstrate the basic techniques of counseling.

CJC 212 Ethics and Community Relations **3 0 3**
Prerequisites: None
Corequisites: None
This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to demonstrate the ability to apply ethical considerations to the decision-making process in identifiable criminal justice situations.

CJC 213 Substance Abuse **3 0 3**
Prerequisites: None
Corequisites: None
This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities. Drug enforcement programs and techniques will be discussed.

CJC 214 Victimology **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the study of victims. Emphasis is placed on roles/characteristics of victims, victim interaction with the criminal justice system and society, current victim assistance programs, and other related topics. Upon completion, students should be able to discuss and identify victims, the uniqueness of victims' roles, and current victim assistance programs.

CJC 215 Organization and Administration **3 0 3**
Prerequisites: CJC 111
Corequisites: None
This course introduces the components and functions of organization and administration as it applies to the agencies of the criminal justice system. Topics include operations/functions of organizations; recruiting, training, and retention of personnel; funding and budgeting; communications; span of control and discretion; and other related topics. Upon completion, students should be able to identify and discuss the basic components and functions of a criminal justice organization and its administrative operations.

CJC 221 Investigative Principles **3 2 4**
Prerequisites: CJC 131
Corequisites: None
This course introduces the theories and fundamentals of the investigative process. Topics include crime scene/incident processing, information gathering techniques, collection/preservation of evidence, preparation of appropriate reports, court presentations, and other related topics. Upon completion, students should be able to identify, explain, and demonstrate the techniques of the investigative process, report preparation, and courtroom presentation.

CJC 222 Criminalistics **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the functions of the forensic laboratory and its relationship to successful criminal investigations and prosecutions. Topics include advanced crime scene processing, investigative techniques, current forensic technologies, and other related topics. Upon completion, students should be able to identify and collect relevant evidence at simulated crime scenes and request appropriate laboratory analysis of submitted evidence. An emphasis will be placed on current technology for collection and classification of fingerprint evidence.

CJC 231 Constitutional Law **3 0 3**
Prerequisites: None
Corequisites: None
The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/ procedures as interpreted by the courts.

CJC 251 Forensic Chemistry I **3 2 4**
Prerequisites: None
Corequisites: None
This course provides a study of the fundamental concepts of chemistry as it relates to forensic science. Topics include physical and chemical properties of substances, metric measurements, chemical changes, elements, compounds, gases, and atomic structure. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of forensic chemistry.

CJC 252 Forensic Chemistry II **3 2 4**
Prerequisites: CJC 251
Corequisites: None
This course provides a study of specialized areas of chemistry specifically related to forensic science. Topics include properties of light, emission and absorption spectra, spectrophotometry, gas and liquid chromatography, and related topics in organic and biochemistry. Upon completion, students should be able to demonstrate an understanding of specialized concepts in forensic chemistry.

Cooperative Education

***COE 111 EC Co-op Work Experience I** **0 0 10 1**
Prerequisites: EDU 111
Corequisites: COE 115 EC
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. This supervised experience gives the student an opportunity to apply age-appropriate principles of child development, relationships, and learning in a child care environment.

***COE 111 MT Co-op Work Experience I** **0 0 10 1**
Prerequisites: Thirty semester hours of curriculum courses
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. This co-op work experience will be a transcription internship.

***COE 111 SS Co-op Work Experience I** **0 0 10 1**
Prerequisites: Departmental approval
Corequisites: COE 115 SS
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. Intended for students in the Social Service Associate program.

***COE 112 A Co-op Work Experience I** **0 0 20 2**
Prerequisites: Departmental approval
Corequisites: None
This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Automotive Systems Technology students only.

COE 112CU Co-op Work Experience I **0 0 20 2**
Prerequisites: Completed First Year Curriculum
Corequisites: None
This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The practical culinary training experience provides the student an opportunity to apply and enhance the skills and methodologies of the professional culinarian.

COE 112HR Co-op Work Experience I **0 0 20 2**
Prerequisites: Completed First Year Curriculum
Corequisites: None
This course provides work experience with a college approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The practical hospitality in-field training experience provides the student an opportunity to apply and enhance skills and methodologies required of the hospitality professional.

***COE 113 A Co-op Work Experience I** **0 0 30 3**
Prerequisites: Departmental approval
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Automotive Systems Technology students only.

COE 114HE Co-op Work Experience I **0 0 40 4**
Prerequisites: None
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

***COE 115 EC Work Experience Seminar I** **1 0 0 1**
Prerequisites: EDU 111
Corequisites: COE 111 EC
This course provides students with an opportunity to evaluate experiences in the child care setting and discuss curriculum components. Emphasis is placed on planning and carrying out developmentally appropriate activities. Upon completion, students should be able to plan, conduct, and evaluate educational experiences in the early childhood setting.

***COE 115 SS Work Experience Seminar I** **1 0 0 1**
Prerequisites: Departmental approval
Corequisites: COE 111 SS
This course provides a forum for students to share information on their social service agency work experience. Emphasis is placed upon relating classroom concepts to the work experience. Upon completion, the student will demonstrate an understanding of the nature of various agency work environments.

***COE 121 EC Co-op Work Experience II** **0 0 10 1**
Prerequisites: COE 111 EC and COE 115 EC or departmental approval
Corequisites: COE 125 EC
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. Students will demonstrate care-giving skills including managing children's behavior and meeting individual needs in a child care setting chosen by the department.

***COE 121 SS Co-op Work Experience II** **0 0 10 1**
Prerequisites: COE 111 SS
Corequisites: COE 125 SS
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. Intended for students enrolled in the Social Services program.

COE 123 A Co-op Work Experience II **0 0 30 3**
Prerequisites: Departmental approval
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Automotive Systems Technology students only.

COE 124HE Co-op Work Experience II **0 0 40 4**
Prerequisites: None
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

***COE 125 EC Work Experience Seminar II** **1 0 0 1**
Prerequisites: COE 111 EC and COE 115 EC
Corequisites: COE 121 EC
This course provides an opportunity for students to plan and evaluate educational activities in their co-op experience. Emphasis is placed on planning developmentally appropriate activities for young children. Upon completion, students should be able to plan, carry out and evaluate developmentally appropriate activities for young children.

***COE 125 SS Work Experience Seminar II** **1 0 0 1**
Prerequisites: COE 115 SS
Corequisites: COE 121 SS
This course provides a forum for students to share information on their agency work experience. Emphasis is placed upon relating classroom concepts to the work experience. Upon completion, the student will demonstrate an understanding of the nature of various agency work environments. Intended for students enrolled in the Social Services program.

***COE 131 EC Co-op Work Experience III** **0 0 10 1**
Prerequisites: Successful completion of first four semesters of EDU or departmental approval
Corequisites: COE 135 EC
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. In this capstone course, students must demonstrate the competencies needed by an Early Childhood Associate and identified for the program.

***COE 132 ME Co-op Work Experience III** **0 0 20 2**
Prerequisites: None
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. For Mechanical Engineering Technology students only.

***COE 135 EC Work Experience Seminar III** **1 0 0 1**
Prerequisites: COE 121 EC and COE 125 EC
Corequisites: COE 131 EC
This course provides an opportunity for the student to discuss topics related to their co-op experience and prepare to go into the work force. Emphasis is placed on conducting a developmentally appropriate program, resume writing, and job interviewing skills. Upon completion, the student should be able to perform work related competencies in working with young children.

COE 211 OS Co-op Work Experience IV **0 0 10 1**
Prerequisites: Departmental approval
Corequisites: COE 215 IS
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The cooperative experience will allow the student to apply skills learned in Office Systems Technology courses to on-the-job work experience.

COE 212 IS Co-op Work Experience IV **0 0 20 2**
Prerequisites: Departmental approval
Corequisites: None
This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. The cooperative experience will allow IS students to apply skills learned in their courses to on-the-job work experience.

COE 215 IS Work Experience Seminar IV **1 0 0 1**
Prerequisites: Departmental approval
Corequisites: COE 211, COE 212 or COE 213
The working student will discuss issues related to Information Systems Technology as well as challenges of the workplace.

COE 215 OS Work Experience Seminar IV **1 0 0 1**
Prerequisites: Departmental approval
Corequisites: COE 211 OS
The working student will discuss issues related to Office Systems Technology careers. Problems encountered in the workplace will be discussed as well as solutions.

Communications

COM 231 Public Speaking **3 0 3**
Prerequisites: None
Corequisites: None
This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in speech/communictions.*

Computer Programming

CSC 139 Visual BASIC Programming **2 3 3**
Prerequisites: CIS 115
Corequisites: None
This course introduces event-driven computer programming using the Visual BASIC programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, forms, sequential files, and other related topics. Upon completion, students should be able to design, code, test, and debug Visual BASIC language programs.

CSC 141 Visual C++ Programming **2 3 3**
Prerequisites: CIS 115
Corequisites: None
This course introduces event-driven computer programming using the Visual C++ programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, and other related topics. Upon completion, students should be able to design, code, test, and debug Visual C++ language programs.

CSC 239 Advanced Visual BASIC **2 3 3**
Prerequisites: CIS 139
Corequisites: None
This course is a continuation of CSC 139 using Visual BASIC with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions.

CSC 241 Advanced Visual C++ **2 3 3**
Prerequisites: CIS 141
Corequisites: None
This course is a continuation of CSC 141 using Visual C++ with object-oriented programming principles. Emphasis is placed on advanced arrays, file management/processing techniques, data structures, sub-programs, interactive processing, algorithms, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions.

CSC 293 Selected Topics in Computer Programming **1 4 3**
Prerequisites: CIS 286, advanced programming electives, and fifth semester status
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Students will use programming skills to complete a project from the definition phase through implementation. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

Culinary

CUL 110 Sanitation and Safety **2 0 2**
Prerequisites: None
Corequisites: CUL 110A for Culinary students
This course introduces the basic principles of sanitation and safety and their relationship to the hospitality industry. Topics include personal hygiene, sanitation and safety regulations, use and care of equipment, the principles of food-borne illness, and other related topics. Upon completion, students should be able to demonstrate an understanding of sanitation and safety procedures in the hospitality industry. Students are required to pass the National Restaurant Association sanitation examination to receive credit for the course.

***CUL 110A Sanitation and Safety Lab** **0 2 1**
Prerequisites: None
Corequisites: CUL 110 for Culinary students
This course is a laboratory to accompany CUL 110. Emphasis is placed on practical experiences that enhance the materials presented in CUL 110. The focus of the class is to familiarize students with the operation and safe handling of commercial kitchen equipment. Upon completion, students should be able to demonstrate practical applications of sanitation and safety procedures in the hospitality industry.

CUL 112 Nutrition for Foodservice **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the principles of nutrition and its relationship to the foodservice industry. Topics include fundamentals of personal nutrition, nutrition over the life cycle, weight management and exercise, health aspects of nutrition, developing healthy recipes and menus, healthy cooking techniques and marketing nutrition in a foodservice operation. Upon completion, students should be able to apply basic nutritional concepts to food preparation and selection.

CUL 120 Purchasing **2 0 2**
Prerequisites: None
Corequisites: None
This course covers purchasing for hotels and restaurants. Emphasis is placed on procurement, yield tests, inventory control, specification, planning, forecasting, market trends, terminology, cost controls, pricing, and food service ethics. Upon completion, students should be able to apply effective purchasing techniques based on the end-use of the product.

***CUL 130 Menu Design** **2 0 2**
Prerequisites: CUL students: CUL 140, HRM 220
HRM students: CUL 142, HRM 220
Corequisites: CUL students: HRM 220
This course introduces menu design. Topics include development of standardized recipes, layout, nutritional concerns, product utilization, demographics, and customer needs. Upon completion, students should be able to write, lay out, and produce effective menus for a variety of hospitality settings.

***CUL 135 Food and Beverage Service** **2 0 2**
Prerequisites: CUL students: CUL 180 HRM students: CUL 142
Corequisites: CUL students: CUL 250, CUL 135A HRM students: CUL135A
This course covers the practical skills and knowledge for effective food and beverage service in a variety of settings. Topics include reservations, greeting and service of guests, styles of service, handling complaints, and sales and merchandising. Upon completion, students should be able to demonstrate competence in human relations and technical skills required in the service of foods and beverages.

***CUL 135A Food and Beverage Service Lab** **0 2 1**
Prerequisites: CUL students: CUL 180 HRM students: CUL 142
Corequisites: CUL students: CUL 135, CUL 250 HRM students: CUL 135
This course is a laboratory to accompany CUL 135. Emphasis is placed on practical experiences that enhance the materials presented in CUL 135. Upon completion, students should be able to demonstrate practical applications of skills required in the service of foods and beverages.

***CUL 140 Basic Culinary Skills** **2 6 5**
Prerequisites: None
Corequisites: CUL110, CUL110A
This course introduces the fundamental concepts, skills, and techniques involved in basic cookery. Emphasis is placed on recipe conversion, measurements, terminology, knife skills, safe food handling, cooking methods, flavorings, seasonings, stocks/sauces/soups, and other related topics. Upon completion, students should be able to exhibit the basic cooking skills used in the food service industry. Weekly participation in American Regional and International buffets, banquets, and a la carte production enhances students' culinary and service skills.

CUL 142 Fundamentals of Food **2 6 5**
Prerequisites: None
Corequisites: CUL 110, CUL 110A, HRM 192
This course introduces the student to the basic principles of cooking, baking, and kitchen operations. Topics include protein, starch, vegetable/fruit identification, selection, storage and preparation; breakfast cookery, breads, sweet doughs and pastries; knife/organizational skills, and work coordination. Upon completion, students should be able to execute efficiently a variety of cooking/baking skills as they apply to different stations in the kitchen. Weekly participation in American regional and international buffets, banquets, and à la carte production enhances student service skills.

***CUL 150 Food Science** **1 2 2**
Prerequisites: None
Corequisites: None
This course covers the chemical and physical changes in foods that occur with cooking, handling, and processing. Topics include heat transfer and its effect on color, flavor, and texture; and emulsification, protein coagulation, leavening agents, viscosity, and gel formation. Upon completion, students should be able to demonstrate an understanding of the principles covered as they apply to food preparation in an experimental setting.

***CUL 160 Baking I** **1 4 3**
Prerequisites: CUL 110, CUL 110A
Corequisites: None
This course covers basic ingredients, weights and measures, baking terminology, and formula calculations. Topics include yeast-raised products, quick breads, pastry dough, various cakes and cookies, and appropriate filling and finishing techniques. Historical perspectives and current practices will be addressed. Upon completion, students should be able to prepare and evaluate baked products.

***CUL 170 Gardemanger I** **1 4 3**
Prerequisites: CUL 110, CUL 110A
Corequisites: None
This course introduces basic cold food preparation techniques and pantry production. Topics include salads, sandwiches, appetizers, dressings, basic garnishes, cheeses, cold sauces, and related food items. Upon completion, students should be able to lay out a basic cold food display and exhibit an understanding of the cold kitchen and its related terminology.

***CUL 180 International and American Regional Cuisine** **1 8 5**
Prerequisites: CUL 140, CUL 240, CUL 240A
Corequisites: None
This course provides practical experience in the planning, preparation, and service of representative foods from different countries and regions of America. Emphasis is placed on eating habits, indigenous foods and customs, nutritional concerns, and traditional equipment. Upon completion, students should be able to research and execute international and domestic menus. Weekly participation in buffets, banquets, and a la carte production enhances students' supervisory and technical skills.

CUL 214 Wine Appreciation **1 2 2**
Prerequisites: CUL 180 or departmental approval
Corequisites: None
This course provides comprehensive and detailed information about wine from all the major wine producing countries. Emphasis is placed on the history of wine, production characteristics, laws, and purchasing and storing requirements. Upon completion, students should be able to determine what wines complement various cuisines and particular tastes.

***CUL 240 Advanced Culinary Skills** **1 8 5**
Prerequisites: CUL 110, CUL 110A, CUL 140
Corequisites: CUL 240A
This course is a continuation of CUL 140. Emphasis is placed on meat fabrication and butchery; vegetable, starch, and protein cookery; compound sauces; plate presentation; breakfast cookery; and quantity food preparation. Upon completion, students should be able to plan, execute, and successfully serve entrees with complementary side items. Weekly participation in a la carte production enhances students' culinary and service skills.

CUL 240A Advanced Culinary Skills Lab **0 3 1**
Prerequisites: CUL 140, CUL 110, CUL 110A
Corequisites: CUL 240
This is a laboratory course to accompany CUL 240. Emphasis is placed on the practical experiences that enhance the materials and skills presented in CUL 240. Upon completion, students should be able to demonstrate a basic proficiency in the preparation of entrees and accompaniments.

***CUL 250 Classical Cuisine** **1 8 5**
Prerequisites: CUL 180, CUL 240, CUL 270, and successful completion of the first four semesters of the program
Corequisites: CUL 135, CUL 135A
This course reinforces the classical culinary kitchen as established by Escoffier. Topics include the working Grand Brigade of the kitchen, table d'hôte menus, signature dishes, alfresco dining, exhibition cooking, and classical banquets. Upon completion, students should be able to demonstrate competence in food preparation in a classical/upscale restaurant or banquet setting. This course includes weekly a la carte service encompassing contemporary and classical preparation and a capstone final exam.

***CUL 260 Baking II** **1 4 3**
Prerequisites: CUL 110, CUL 110A, CUL160
Corequisites: None
This course is a continuation of CUL 160. Topics include specialty breads, understanding, development and maintaining of natural sourdough, classical desserts, laminated pastry dough, cake and torte decorating and dessert plating and presentation. Upon completion, students should be able to demonstrate pastry presentation and plating, specialty sourdough production, cake decorating and dessert buffet production skills.

***CUL 270 Gardemanager II** **1 4 3**
Prerequisites: CUL 170, CUL 240
Corequisites: None
This course is a continuation of CUL 170. Topics include pâtés, terrines, galantines, ice and tallow carving, chaud-froid/aspic work, charcuterie, smoking, canapés, hors d'oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering function to include a classical cold buffet with appropriate show pieces.

CUL 280 Pastry and Confections **1 4 3**
Prerequisites: CUL 110, CUL 110A, CUL 160
Corequisites: None
This course is a continuation of CUL 260. Topics include confections and candy, chocolate tempering and molding, transfersheets, pulled and blown sugar (basic pulling and ribboning), pastillage, marzipan and custom silicon molding. Upon completion, students will be able to design and produce centerpieces and showpieces made from tempered chocolate, pulled sugar, pastillage and marzipan, as produced through custom molding, pre-set molding, stencil cutouts, pattern tracing and/or freehand shaping.

Design Drafting

***DDF 211 Design Drafting I** **2 6 4**
Prerequisites: DFT 112
Corequisites: None
This course emphasizes design processes for finished products. Topics include data collection from manuals and handbooks, efficient use of materials, design sketching, specifications, and vendor selection. Upon completion, students should be able to research and plan the design process for a finished product.

DDF 221 Design Drafting Project **0 4 2**
Prerequisites: DFT 111, DFT 112, DFT 151
Corequisites: None
This course incorporates ideas from concept to final design. Topics include reverse engineering, design for manufacturability, and mock-up construction. Upon completion, students should be able to generate working drawings and models based on physical design parameters.

Developmental Disabilities

DDT 110 Developmental Disabilities **3 0 0 3**
Prerequisites: None
Corequisites: None
This course identifies the characteristics and causes of various disabilities. Topics include history of service provision, human rights, legislation and litigation, advocacy, and accessing support services. Upon completion, students should be able to demonstrate an understanding of current and historical developmental disability definitions and support systems used throughout the life span.

Dental

***DEN 101 Preclinical Procedures** **4 6 0 7**
Prerequisites: None
Corequisites: DEN 111
This course provides instruction in procedures for the clinical dental assistant as specified by the North Carolina Dental Practice Act. Emphasis is placed on orientation to the profession, infection control techniques, instruments, related expanded functions, and diagnostic, operative, and specialty procedures. Upon completion, students should be able to demonstrate proficiency in clinical dental assisting procedures. *This is a diploma-level course.*

***DEN 102 Dental Materials** **3 4 0 5**
Prerequisites: None
Corequisites: DEN 101
This course provides instruction in identification, properties, evaluation of quality, principles, and procedures related to manipulation and storage of operative and specialty dental materials. Emphasis is placed on the understanding and safe application of materials used in the dental office and laboratory. Upon completion, students should be able to demonstrate proficiency in the laboratory and clinical application of routinely used dental materials. *This is a diploma-level course.*

DEN 103 Dental Sciences **2 0 0 2**
Prerequisites: None
Corequisites: None
This course is a study of oral pathology, pharmacology, and dental office emergencies. Topics include oral pathological conditions, dental therapeutics, and management of emergency situations. Upon completion, students should be able to recognize abnormal oral conditions, identify classifications, describe actions and effects of commonly prescribed drugs, and respond to medical emergencies. *This is a diploma-level course.*

***DEN 104 Dental Health Education** **2 2 0 3**
Prerequisites: DEN 101 and DEN 111
Corequisites: DEN 106
This course covers the study of preventative dentistry to prepare dental assisting students for the role of dental health educator. Topics include etiology of dental diseases, preventative procedures, and patient education theory and practice. Upon completion, students should be able to demonstrate proficiency in patient counseling and oral health instruction in private practice or public health settings. *This is a diploma-level course.*

***DEN 105 Practice Management** **2 0 0 2**
Prerequisites: None
Corequisites: None
This course provides a study of principles and procedures related to management of the dental practice. Emphasis is placed on maintaining clinical and financial records, patient scheduling, and supply and inventory control. Upon completion, students should be able to demonstrate fundamental skills in dental practice management. *This is a diploma-level course.*

***DEN 106 Clinical Practice I** **1 0 12 5**
Prerequisites: DEN 101 and DEN 111
Corequisites: DEN 102, DEN 104, and DEN 112
This course is designed to provide experience assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to utilize classroom theory, laboratory, and clinical skills in a dental setting. *This is a diploma-level course.*

***DEN 107 Clinical Practice II** **1 0 12 5**
Prerequisites: DEN 106
Corequisites: None
This course is designed to increase the level of proficiency in assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to combine theoretical and ethical principles necessary to perform entry-level skills including functions delegable to a DA II. *This is a diploma-level course.*

DEN 110 Orofacial Anatomy **2 2 0 3**
Prerequisites: None
Corequisites: None
This course introduces the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to relate the identification of normal structures and development to the practice of dental assisting and dental hygiene.

DEN 111 Infection/Hazard Control **2 0 0 2**
Prerequisites: None
Corequisites: DEN 101 or DEN 121
This course introduces the infection and hazard control procedures necessary for the safe practice of dentistry. Topics include microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSHA standards, and applicable North Carolina laws. Upon completion, students should be able to understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSHA standards, and applicable North Carolina laws.

DEN 112 Dental Radiography **2 3 0 3**
Prerequisites: Enrollment in the Dental Hygiene or Dental Assisting programs
Corequisites: DEN 101 or DEN 110 and DEN 111
This course provides a comprehensive view of the principles and procedures of radiology as they apply to dentistry. Topics include techniques in exposing, processing, and evaluating radiographs, as well as radiation safety, quality assurance, and legal issues. Upon completion, students should be able to demonstrate proficiency in the production of diagnostically acceptable radiographs using appropriate safety precautions.

DEN 120 Dental Hygiene Preclinic Lecture **2 0 0 2**
Prerequisites: Enrollment in the Dental Hygiene program
Corequisites: DEN 121
This course introduces preoperative and clinical dental hygiene concepts. Emphasis is placed on the assessment phase of patient care as well as the theory of basic dental hygiene instrumentation. Upon completion, students should be able to collect and evaluate patient data at a basic level and demonstrate knowledge of dental hygiene instrumentation.

***DEN 121 Dental Hygiene Preclinic Lab** **0 6 0 2**
Prerequisites: Enrollment in the Dental Hygiene program
Corequisites: DEN 120 and DEN 111
This course provides the opportunity to perform clinical dental hygiene procedures discussed in DEN 120. Emphasis is placed on clinical skills in patient assessment and instrumentation techniques. Upon completion, students should be able to demonstrate the ability to perform specific preclinical procedures. Also, students should be able to demonstrate aseptic technique used in a dental environment.

DEN 123 Nutrition/Dental Health **2 0 0 2**
Prerequisites: DEN 120 and DEN 130
Corequisites: None
This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.

DEN 124 Periodontology **2 0 0 2**
Prerequisites: DEN 110
Corequisites: None
This course provides an in-depth study of the periodontium, periodontal pathology, periodontal monitoring, and the principles of periodontal therapy. Topics include periodontal anatomy and a study of the etiology, classification, and treatment modalities of periodontal diseases. Upon completion, students should be able to describe, compare, and contrast techniques involved in periodontal/maintenance therapy, as well as patient care management.

***DEN 125 Dental Office Emergencies** **0 2 0 1**
Prerequisites: None
Corequisites: None
This course provides a study of the management of dental office emergencies. Topics include methods of prevention, necessary equipment/drugs, medicolegal considerations, recognition and effective initial management of a variety of emergencies. Upon completion, students should be able to recognize, assess, and manage various dental office emergencies and activate advanced medical support when indicated.

***DEN 130 Dental Hygiene Theory I** **2 0 0 2**
Prerequisites: DEN 120
Corequisites: DEN 131
This course is a continuation of the didactic dental hygiene concepts necessary for providing an oral prophylaxis. Topics include deposits/removal, instrument sharpening, patient education, fluorides, planning for dental hygiene treatment, charting, and clinical records and procedures. Upon completion, students should be able to demonstrate knowledge needed to complete a thorough oral prophylaxis.

***DEN 131 Dental Hygiene Clinic I** **0 0 9 3**
Prerequisites: DEN 121
Corequisites: DEN 130
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of the recall patients with gingivitis or light deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 140 Dental Hygiene Theory II** **1 0 0 1**
Prerequisites: DEN 130
Corequisites: DEN 141
This course provides a continuation of the development, theory, and practice of patient care. Topics include modification of treatment for special needs patients, advanced radiographic interpretation, and ergonomics. Upon completion, students should be able to differentiate necessary treatment modifications, effective ergonomic principles, and radiographic abnormalities.

***DEN 141 Dental Hygiene Clinic II** **0 0 6 2**
Prerequisites: DEN 131
Corequisites: DEN 140
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with early periodontal disease and subgingival deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 220 Dental Hygiene Theory III** **2 0 0 2**
Prerequisites: BIO 175, DEN 140
Corequisites: DEN 221
This course provides a continuation in developing the theories and practices of patient care. Topics include periodontal debridement, pain control, subgingival irrigation, air polishing, and case presentations. Upon completion, students should be able to demonstrate knowledge of methods of treatment and management of periodontally compromised patients.

***DEN 221 Dental Hygiene Clinic III** **0 0 12 4**
Prerequisites: DEN 141
Corequisites: DEN 220
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with moderate to advanced periodontal involvement and moderate deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 222 General and Oral Pathology **2 0 0 2**
Prerequisites: BIO 163 or BIO 165 or BIO 168
Corequisites: BIO 169
This course provides a general knowledge of oral pathological manifestations associated with selected systemic and oral diseases. Topics include developmental and degenerative diseases, selected microbial diseases, specific and nonspecific immune and inflammatory responses with emphasis on recognizing abnormalities. Upon completion, students should be able to differentiate between normal and abnormal tissues and refer unusual findings to the dentist for diagnosis.

DEN 223 Dental Pharmacology **2 0 0 2**
Prerequisites: Enrollment in the Dental Hygiene program
Corequisites: BIO 163 or BIO 165 or BIO 168
This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient's general health or drug usage may require modification of the treatment procedures.

***DEN 224 Materials and Procedures** **1 3 0 2**
Prerequisites: DEN 111
Corequisites: None
This course introduces the physical properties of materials and related procedures used in dentistry. Topics include restorative and preventative materials, fabrication of casts and appliances, and chair-side functions of the dental hygienist. Upon completion, students should be able to demonstrate proficiency in the laboratory and/or clinical application of routinely used dental materials and chair-side functions.

***DEN 230 Dental Hygiene Theory IV** **1 0 0 1**
Prerequisites: DEN 220
Corequisites: DEN 231
This course provides an opportunity to increase knowledge of the profession. Emphasis is placed on dental specialties and completion of a case presentation. Upon completion, students should be able to demonstrate knowledge of various disciplines of dentistry and principles of case presentations.

***DEN 231 Dental Hygiene Clinic IV** **0 0 12 4**
Prerequisites: DEN 221
Corequisites: DEN 230
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on periodontal maintenance and on treating patients with moderate to advanced/refractory periodontal disease. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

***DEN 232 Community Dental Health** **2 0 3 3**
Prerequisites: Enrollment in the Dental Hygiene program, COM 231, and SOC 240
Corequisites: None
This course provides a study of the principles and methods used in assessing, planning, implementing, and evaluating community dental health programs. Topics include epidemiology, research methodology, biostatistics, preventative dental care, dental health education, program planning, and financing and utilization of dental services. Upon completion, students should be able to assess, plan, implement, and evaluate a community dental health program.

***DEN 233 Professional Development** **2 0 0 2**
Prerequisites: Enrollment in the Dental Hygiene program
Corequisites: None
This course includes professional development, ethics, and jurisprudence with applications to practice management. Topics include conflict management, state laws, resumes, interviews, and legal liabilities as health care professionals. Upon completion, students should be able to demonstrate the ability to practice dental hygiene within established ethical standards and state laws.

DEN 292 Selected Topics in Dental Hygiene **2 0 0 2**
Prerequisites: Enrollment in the Dental Hygiene program
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. Topics will include theory and methods of tobacco cessation as well as other timely information related to dental hygiene practice.

Drafting

DFT 111 Technical Drafting I **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces basic drafting skills, equipment, and applications. Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, sections, and auxiliary views. Upon completion, students should be able to understand and apply basic drawing principles and practices.

DFT 111A Technical Drafting I Lab **0 3 1**
Prerequisites: None
Corequisites: DFT 111 (for CAD Systems Management students only)
This course provides a laboratory setting to enhance basic drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 111. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 111.

DFT 112 Technical Drafting II **1 3 2**
Prerequisites: DFT 111
Corequisites: DFT 112A
This course provides for advanced drafting practices and procedures. Topics include detailed working drawings, hardware, fits and tolerances, assembly and subassembly, geometric dimensioning and tolerancing, intersections, and developments. Upon completion, students should be able to produce detailed working drawings.

DFT 112A Technical Drafting II Lab **0 3 1**
Prerequisites: None
Corequisites: DFT 112
This course provides a laboratory setting to enhance advanced drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 112. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 112.

DFT 115 Architectural Drafting **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces basic drafting practices used in residential and light commercial design. Topics include floor plans, foundations, details, electrical components, elevations, and dimensioning practice. Upon completion, students should be able to complete a set of working drawings for a simple structure.

DFT 117 Technical Drafting **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces basic drafting practices for non-drafting majors. Emphasis is placed on instrument use and care, shape and size description, sketching, and pictorials. Upon completion, students should be able to produce drawings of assigned parts.

DFT 119 Basic CAD **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces computer-aided drafting software for specific technologies to non-drafting majors. Emphasis is placed on understanding the software command structure and drafting standards for specific technical fields. Upon completion, students should be able to create and plot basic drawings.

DFT 121 Intro. to Geometric Dimensioning and Tolerancing **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces basic geometric dimensioning and tolerancing principles. Topics include symbols, annotation, theory, and applications. Upon completion, students should be able to interpret and apply basic geometric dimensioning and tolerancing principles to drawings.

DFT 151 CAD I **2 3 3**
Prerequisites: None
Corequisites: None
This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing.

DFT 152 CAD II **2 3 3**
Prerequisites: DFT 151
Corequisites: None
This course is a continuation of DFT 151. Topics include advanced two-dimensional, three-dimensional, and solid modeling and extended CAD applications. Upon completion, students should be able to generate and manage CAD drawings and models to produce engineering documents.

DFT 153 CAD III **2 3 3**
Prerequisites: DFT 151
Corequisites: None
This course covers basic principles of three-dimensional CAD wireframe and surface models. Topics include user coordinate systems, three-dimensional viewpoints, three-dimensional wireframes, and surface components and viewpoints. Upon completion, students should be able to create and manipulate three-dimensional wireframe and surface models.

DFT 170 Engineering Graphics **2 2 3**
Prerequisites: None
Corequisites: None
This course introduces basic engineering graphics skills, equipment, and applications (manual and computer-aided). Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, and sectional and auxiliary views. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices.
This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DFT 251 Customizing CAD Software **2 2 3**
Prerequisites: DFT 151 and DFT 152
Corequisites: None
This course covers customizing CAD software. Topics include the creation of symbol libraries and screen menus, macro writing, and automation of common drafting functions on CAD. Upon completion, students should be able to create a symbol library and screen menu and automate common drawing functions. This course is a unique concentration requirement of the CAD Systems Management Concentration in the Mechanical Drafting Technology program.

DFT 252 Solid Models and Renderings **2 2 3**
Prerequisites: DFT 153
Corequisites: None
This course provides an in-depth study of three-dimensional solid modeling and design software. Topics include parametric design; creation, editing, and rendering of solid models; and generation of views. Upon completion, students should be able to use parametric design techniques to create and edit a three-dimensional solid model, render it, and generate two-dimensional views. This course is a unique concentration requirement of the CAD Systems Management Concentration in the Mechanical Drafting Technology program.

***DFT 253 CAD Data Management** **2 2 3**
Prerequisites: CIS 110, DFT 151, and DFT 251
Corequisites: None
This course covers engineering document management techniques. Topics include efficient control of engineering documents, manipulation of CAD drawing data, generation of bill of materials, and linking to spreadsheets or databases. Upon completion, students should be able to utilize systems for managing CAD drawings, extract data from drawings, and link data to spreadsheets or database applications. This course is a unique concentration requirement of the CAD Systems Management Concentration in the Mechanical Drafting Technology program.

***DFT 259 CAD Project** **1 4 3**
Prerequisites: DDF 211, DFT 112, DFT 251, DFT 252, and DFT 253
Corequisites: None
This course is a capstone course experience for the CAD Systems Management concentration. Emphasis is placed on the use of design principles and computer technology in planning, managing, and completing a design project. Upon completion, students should be able to plan and produce engineering documents of a design project, including solid models, working drawings, bom's, annotations, and spreadsheets. This course is a unique concentration requirement in the CAD Systems Management concentration in the Mechanical Drafting Technology program.

Drama

DRA 111 Theatre Appreciation **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a study of the art, craft, and business of the theatre. Emphasis is placed on the audience's appreciation of the work of the playwright, director, actor, designer, producer, and critic. Upon completion, students should be able to demonstrate a vocabulary of theatre terms and to recognize the contributions of various theatre artists. Attendance at one play performance and in-depth reading of two plays are required. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

DRA 112 Literature of the Theatre **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a survey of dramatic works from the classical Greek through the present. Emphasis is placed on the language of drama, critical theory, and background as well as on play reading and analysis. Upon completion, students should be able to articulate, orally and in writing, their appreciation and understanding of dramatic works. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

DRA 124 Readers Theatre **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a theoretical and applied introduction to the medium of readers theatre. Emphasis is placed on the group performance considerations posed by various genres of literature. Upon completion, students should be able to adapt and present a literary script following the conventions of readers theatre. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Economics

ECO 151 Survey of Economics **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces basic concepts of micro- and macroeconomics. Topics include supply and demand, optimizing economic behavior, prices and wages, money, interest rates, banking system, unemployment, inflation, taxes, government spending, and international trade. Upon completion, students should be able to explain alternative solutions for economic problems faced by private and government sectors. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

ECO 251 Principles of Microeconomics **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces economic analysis of individual, business, and industry choices in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

ECO 252 Principles of Macroeconomics **3 0 3**
Prerequisites: ECO 151 or ECO 251 or permission of Instructor
Corequisites: None
This course introduces economic analysis of aggregate employment, income, and prices. Topics include major schools of economic thought; aggregate supply and demand; economic measures, fluctuations, and growth; money and banking; stabilization techniques; and international trade. Upon completion, students should be able to evaluate national economic components, conditions, and alternatives for achieving socioeconomic goals. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

Education

***EDU 111 Early Childhood Cred I** **2 0 2**
Prerequisites: Test out of ABS reading on CPT.
Corequisites: None
This course introduces early childhood education and the role of the teacher in environments that encourage exploration and learning. Topics include professionalism, child growth and development, individuality, family, and culture. Upon completion, students should be able to identify and demonstrate knowledge of professional roles, major areas of child growth and development, and diverse families.

***EDU 112 Early Childhood Cred II** **2 0 2**
Prerequisites: Test out of ABS reading on CPT.
Corequisites: None
This course introduces developmentally appropriate practices, positive guidance, and standards of health, safety, and nutrition. Topics include the learning environment, planning developmentally appropriate activities, positive guidance techniques and health, safety, and nutrition standards. Upon completion, students should be able to demonstrate developmentally appropriate activities and positive guidance techniques; and describe health/sanitation/nutrition practices that promote healthy environments for children.

***EDU 113 Family/Early Child Cred** **2 0 2**
Prerequisites: None
Corequisites: None
This course covers business/professional practices for family early childhood providers, developmentally appropriate practices, positive guidance, and methods of providing a safe and healthy environment. Topics include developmentally appropriate practices; health, safety, and nutrition; and business and professionalism. Upon completion, students should be able to develop a handbook of policies, procedures, and practices for a family child care home.

***EDU 116 Introduction to Education** **3 2 4**
Prerequisites: None
Corequisites: None
This course introduces the American educational system and the teaching profession. Topics include historical and philosophical foundations of education, contemporary educational trends and issues, curriculum development, and observation and participation in public school classrooms. Upon completion, students should be able to relate classroom observations to the roles of teachers and schools and the process of teacher education. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

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***EDU 131 Child, Family, and Community** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the relationships between the families, programs for children/schools, and the community. Emphasis is placed on establishing and maintaining positive collaborative relationships with families and community resources. Upon completion, students should be able to demonstrate strategies for effectively working with diverse families and identifying and utilizing community resources.

***EDU 144 Child Development I** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the theories of child development and the developmental sequences of children from conception through the pre-school years for early childhood educators. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development and appropriate experiences for the young child. Upon completion, students should be able to identify developmental milestones, plan experiences to enhance development, and describe appropriate interaction techniques and environments for typical/atypical development.

***EDU 145 Child Development II** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers theories of child development and developmental sequences of children from pre-school through middle childhood for early childhood educators. Emphasis is placed on characteristics of physical/motor, social, emotional, and cognitive/language development and appropriate experiences for children. Upon completion, students should be able to identify developmental characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments.

***EDU 146 Child Guidance** **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces practical principles and techniques for developmentally appropriate guidance. Emphasis is placed on encouraging self-esteem and cultural awareness, effective communication skills, and direct and indirect guidance techniques and strategies. Upon completion, students should be able to demonstrate strategies which encourage positive social interactions, promote conflict resolution, and develop self-control, self-motivation, and self-esteem in children.

***EDU 151 Creative Activities** **3 0 3**
Prerequisites: None
Corequisites: EDU 151A
This course covers creative learning environments, planning and implementing developmentally appropriate experiences, and developing appropriate teaching materials for the classroom. Emphasis is placed on creative activities for children in art, music, movement and physical skills, and dramatics. Upon completion, students should be able to select and evaluate developmentally appropriate learning materials and activities.

***EDU 151A Creative Activities Lab** **0 2 1**
Prerequisites: None
Corequisites: EDU 151
This course provides a laboratory component to complement EDU 151. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate creative activities.

***EDU 153 Health, Safety, and Nutrition** **3 0 3**
Prerequisites: None
Corequisites: EDU 153A
This course focuses on promoting and maintaining the health and well-being of children. Topics include health and nutritional needs, safe and healthy environments, and recognition and reporting of child abuse and neglect. Upon completion, students should be able to set up and monitor safe indoor and outdoor environments and implement a nutrition education program.

***EDU 153A Health, Safety, and Nutrition Lab** **0 2 1**
Prerequisites: None
Corequisites: EDU 153
This course provides a laboratory component to complement EDU 153. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of safe indoor/outdoor environments and nutrition education programs.

EDU 162 Early Experience/Prospective Teachers **1 2 2**
Prerequisites: None
Corequisites: None
This course provides an opportunity to observe teachers and pupils in a natural classroom environment. Emphasis is placed on observation methods, planning, teaching, evaluation, personal goal assessment, and curriculum. Upon completion, students should be able to demonstrate an understanding of their own personal teaching goals, teaching methods, planning methods, and student performance evaluation.

***EDU 221 Children with Special Needs** **3 0 3**
Prerequisites: EDU 144 and EDU 145 or PSY 224 and PSY 245
Corequisites: None
This course introduces working with children with special needs. Emphasis is placed on the characteristics and assessment of children and strategies for adapting the home and classroom environment. Upon completion, students should be able to recognize atypical development, make appropriate referrals, and work collaboratively to plan, implement, and evaluate inclusion strategies.

***EDU 234 Infants, Toddlers, and Twos** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the skills needed to effectively implement group care for infants, toddlers, and 2-year-olds. Emphasis is placed on child development and developmentally appropriate practices. Upon completion, students should be able to identify, plan, select materials and equipment, and implement and evaluate a developmentally appropriate curriculum.

EDU 235 School-Age Dev & Program **2 0 2**
Prerequisites: None
Corequisites: None
This course presents developmentally appropriate practices in group care for school-age children. Topics include principles of development, environmental planning, and positive guidance techniques. Upon completion, students should be able to discuss developmental principles for children five to twelve years of age and plan and implement age-appropriate activities.

***EDU 251 Exploration Activities** **3 0 3**
Prerequisites: None
Corequisites: EDU 251A
This course covers discovery experiences in science, math, and social studies. Emphasis is placed on developing concepts for each area and encouraging young children to explore, discover, and construct concepts. Upon completion, students should be able to discuss the discovery approach to teaching, explain major concepts in each area, and plan appropriate experiences for children.

***EDU 251A Exploration Activities Lab** **0 2 1**
Prerequisites: None
Corequisites: EDU 251
This course provides a laboratory component to complement EDU 251. Emphasis is placed on practical experiences that enhance concepts introduced in the classroom. Upon completion, students should be able to demonstrate a practical understanding of the development and implementation of appropriate science, math, and social studies activities for children.

***EDU 259 Curriculum Planning** **3 0 3**
Prerequisites: EDU 112, EDU 113, or EDU 119
Corequisites: None
This course covers early childhood curriculum planning. Topics include philosophy, curriculum, indoor and outdoor environmental design, scheduling, observation and assessment, and instructional planning and evaluation. Upon completion, students should be able to assess children and curriculum; plan for daily, weekly, and long-range instruction; and design environments with appropriate equipment and supplies.

***EDU 261 Early Childhood Administration I** **2 0 2**
Prerequisites: None
Corequisites: None
This course covers the policies, procedures, and responsibilities for the management of early childhood education programs. Topics include implementation of goals, principles of supervision, budgeting and financial management, and meeting the standards for a NC Child Day Care license. Upon completion, students should be able to develop program goals, explain licensing standards, determine budgeting needs, and describe effective methods of personnel supervision.

***EDU 262 Early Childhood Administration II** **3 0 3**
Prerequisites: EDU 261
Corequisites: None
This course provides a foundation for budgetary, financial, and personnel management of the child care center. Topics include budgeting, financial management, marketing, hiring, supervision, and professional development of a child care center. Upon completion, students should be able to formulate marketing, financial management, and fund development plans and develop personnel policies, including supervision and staff development plans.

***EDU 280 Literacy Experiences** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers literacy, early literacy development, and appropriate early experiences with books and writing. Emphasis is placed on reading and writing readiness, major approaches used in teaching literacy, and strategies for sharing quality in children's literature. Upon completion, students should be able to select, plan, and evaluate appropriate early literacy experiences.

English as a Foreign Language

EFL 063 Listening/Speaking III **5 0 5**
Prerequisites: EFL 062
Corequisites: None
This course is designed to increase the ability and confidence of high intermediate level non-native speakers of English in verbal expression and listening comprehension. Emphasis is placed on listening/speaking skills that would be appropriate for group discussions, oral presentations, and note taking. Upon completion, students should be able to successfully participate in high intermediate level listening and speaking activities.

EFL 064 Listening-Speaking IV **5 0 5**
Prerequisites: EFL *063
Corequisites: None
This course is designed to prepare advanced-level non-native speakers of English for academic and professional speaking and listening activities. Emphasis is placed on learning and practicing strategies of effective oral expression and comprehension of spoken discourse in informal and formal settings. Upon completion, students should be able to effectively participate in activities appropriate to academic and professional settings.

EFL 073 Reading III **5 0 5**
Prerequisites: EFL 072
Corequisites: None
This course is designed to develop fundamental reading and study strategies at the intermediate level needed for curriculum programs. Emphasis is placed on building vocabulary and cultural knowledge, improving comprehension, and developing study strategies on basic level college materials and literary works. Upon completion, students should be able to read and comprehend narrative and expository texts at the intermediate instructional level.

EFL 074 Reading IV **5 0 5**
Prerequisites: EFL *073
Corequisites: None
This course is designed to enhance the academic reading skills for successful reading ability as required in college-level courses. Emphasis is placed on strategies for effective reading and the utilization of these strategies to improve comprehension, analytical skills, recall, and overall reading speed. Upon completion, students should be able to comprehend, synthesize, and critique multi-disciplinary college-level reading/textbook materials.

EFL 083 Grammar III **5 0 5**
Prerequisites: EFL 082
Corequisites: None
This course is designed to provide high intermediate non-native speakers of English with a knowledge of grammatical structures that improves academic communication. Emphasis is placed on using high intermediate grammatical structures in meaningful contexts through exercises integrating the use of newly acquired structures with previously learned structures. Upon completion, students should be able to demonstrate improved proficiency, comprehension, and grammatical accuracy.

EFL 084 Grammar IV **5 0 5**
Prerequisites: EFL *083
Corequisites: None
This course is designed to give non-native speakers of English a full understanding of advanced grammatical structures and techniques. Empasis is placed on oral and written communicative fluency through the study of advanced grammatical forms. Upon completion, students should be able to incorporate the structures covered in both spoken and written form, demonstrating improved proficiency, comprehension, and grammatical accuracy.

EFL 092 Composition II **5 0 5**
Prerequisites: None
Corequisites: None
This course introduces basic sentence structure and writing paragraphs. Emphasis is placed on word order, verb tense-aspect system, auxiliaries, word forms, and simple organization and basic transitions in writing paragraphs. Upon completion, students should be able to demonstrate a basic understanding of grammar and ability to write English paragraphs using appropriate vocabulary, organization, and transitions.

EFL 093 Grammar III **5 0 5**
Prerequisites: EFL *092
Corequisites: None
This course covers intermediate-level academic and general purpose writing. Emphasis is placed on the wriitng process, content, organization, and language use in formal academic compositions in differing rhetorical modes. Upon completion, students should be able to effectively use the writing process in a variety of rhetorical modes.

EFL 094 Composition IV **5 0 5**
Prerequisites: EFL *093
Corequisites: None
This course prepares low-advanced non-native speakers of English to determine the purpose of their writing and to write paragraphs and essays to fulfill that purpose. Emphasis is placed on unity, coherence, completeness, audience, the writing process, and the grammatical forms and punctuation appropriate for each kind of writing. Upon completion, students should be able to write unified, coherent, and complete paragraphs and essays which are grammatical and appropriate for the intended audience.

Engineering

***EGR 110 Introduction to Engineering** **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces general topics relevant to engineering technology. Topics include the role of the technician, careers in technology, applied mathematics, and programmable calculators. Upon completion, students should be able to choose a career option in engineering technology and use a programmable calculator to solve technical mathematics problems.

EGR 115 Introduction to Technology **2 6 4**
Prerequisites: None
Corequisites: MAT 121, MAT 161 or MAT 171
This course introduces the basic skills and career fields for technicians. Topics include career options, technical vocabulary, dimensional analysis, measurement systems, engineering graphics, calculator applications, professional ethics, safety practices, and other related topics. Upon completion, students should be able to demonstrate an understanding of the basic technologies, prepare drawings and sketches, and perform computations using a scientific calculator.

EGR 130 Engineering Cost Control **2 2 3**
Prerequisites: MAT 121 or MAT 161 or MAT 171
Corequisites: None
This course covers the management of projects and systems through the control of costs. Topics include economic analysis of alternatives within budget constraints and utilization of the time value of money approach. Upon completion, students should be able to make choices that optimize profits on both short-term and long-term decisions.

***EGR 285 Design Project** **0 4 2**
Prerequisites: None
Corequisites: None
This course provides the opportunity to design and construct an instructor-approved project using previously acquired skills. Emphasis is placed on selection, proposal, design, construction, testing, and documentation of the approved project. Upon completion, students should be able to present and demonstrate operational projects.

Electrical

ELC 111 Introduction to Electricity **2 2 3**
Prerequisites: None
Corequisites: None
This course introduces the fundamental concepts of electricity and test equipment to nonelectrical/electronic majors. Topics include basic DC and AC principles (voltage, resistance, current, impedance); components (resistors, inductors, and capacitors); power; and operation of test equipment. Upon completion, students should be able to construct and analyze simple DC and AC circuits using electrical test equipment.

ELC 112 DC/AC Electricity **3 6 5**
Prerequisites: None
Corequisites: None
This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, and analyze simple DC/AC circuits.

ELC 113 Basic Wiring I **2 6 4**
Prerequisites: None
Corequisites: None
This course introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.

ELC 114 Basic Wiring II **2 6 4**
Prerequisites: ELC 113
Corequisites: None
This course provides additional instruction in the application of electrical tools, materials, and test equipment associated with electrical installations. Topics include the NEC; safety; electrical blueprints; planning, layout, and installation of equipment and conduits; and wiring devices such as panels and overcurrent devices. Upon completion, students should be able to properly install equipment and conduit associated with electrical installations.

ELC 117 Motors and Controls **2 6 4**
Prerequisites: ELC 112 or ELC 131
Corequisites: None
This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.

ELC 119 NEC Calculations **1 2 2**
Prerequisites: None
Corequisites: None
This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code related to calculations. Upon completion, students should be able to use appropriate code sections to size wire, conduit, and overcurrent devices for branch circuits, feeders, and service.

ELC 125 Diagrams and Schematics **1 2 2**
Prerequisites: None
Corequisites: None
This course covers the interpretation of electrical diagrams, schematics, and drawings common to electrical applications. Emphasis is placed on reading and interpreting electrical diagrams and schematics. Upon completion, students should be able to read and interpret electrical diagrams and schematics.

ELC 127 Software for Technicians **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces computer software which can be used to solve electrical/electronics problems. Topics include electrical/electronics calculations, applications, and controls. Upon completion, students should be able to utilize a personal computer for electrical/electronics-related applications.

ELC 128 Introduction to PLC **2 3 3**
Prerequisites: None
Corequisites: None
This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs.

ELC 131 DC/AC Circuit Analysis **4 3 5**
Prerequisites: None
Corequisites: MAT 121
This course introduces DC and AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC and AC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation software, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, verify, and analyze DC/AC circuits; and properly use test equipment.

ELC 132 Electrical Drawings **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces the technical documentation that is typically found or used in the industrial environment. Topics include interpretation of service manuals, freehand sketching of lines, orthographic views and dimensions, and blueprint reading. Upon completion, students should be able to interpret technical documents and blueprints and use basic drafting skills to prepare usable field drawings

ELC 140 Fundamentals of DC/AC Circuit **5 6 7**
Prerequisites: None
Corequisites: None
This course covers the principles of DC/AC circuit analysis as applied to electronics. Topics include atomic theory, circuit analysis, components, test equipment, troubleshooting techniques, schematics, diagrams, and other related topics. Upon completion, students should be able to interpret, construct, verify, analyze, and troubleshoot DC/AC circuits in a safe manner.

ELC 213 Instrumentation **3 2 4**
Prerequisites: ELC 111 or ELC 112 or ELC 131
Corequisites: None
This course covers the fundamentals of instrumentation used in industry. Emphasis is placed on electric, electronic, and pneumatic instruments. Upon completion, students should be able to design, install, maintain, and calibrate instrumentation.

ELC 228 PLC Applications **2 6 4**
Prerequisites: ELC 128
Corequisites: None
This course continues the study of the programming and applications of programmable logic controllers. Emphasis is placed on advanced programming, networking, advanced I/O modules, reading and interpreting error codes, and troubleshooting. Upon completion, students should be able to program and troubleshoot programmable logic controllers.

***ELC 229 Applications Project** **1 3 2**
Prerequisites: ELC 112 or ELC 113 or ELC 140
Corequisites: None
This course provides an individual and/or integrated team approach to a practical project as approved by the instructor. Topics include project selection and planning, implementation and testing, and a final presentation. Upon completion, students should be able to plan and implement an applications-oriented project.

Electronics

ELN 131 Electronic Devices **3 3 4**
Prerequisites: ELC 112, ELC 131, or ELC 140
Corequisites: None
This course includes semiconductor-based devices such as diodes, bipolar transistors, FETs, thyristors, and related components. Emphasis is placed on analysis, selection, biasing, and applications in power supplies, small signal amplifiers, and switching and control circuits. Upon completion, students should be able to construct, analyze, verify, and troubleshoot discrete component circuits using appropriate techniques and test equipment.

ELN 132 Linear IC Applications **3 3 4**
Prerequisites: ELN 131
Corequisites: None
This course introduces the characteristics and applications of linear integrated circuits. Topics include op-amp circuits, differential amplifiers, instrumentation amplifiers, waveform generators, active filters, PLLs, and IC voltage regulators. Upon completion, students should be able to construct, analyze, verify, and troubleshoot linear integrated circuits using appropriate techniques and test equipment.

ELN 133 Digital Electronics **3 3 4**
Prerequisites: ELC 111 or ELC 112, ELC 131 or ELC 140
Corequisites: None
This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, MSI and LSI circuits, AC/DC converters, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment.

ELN 140 Semiconductor Devices **4 6 6**
Prerequisites: ELC 131 or ELC 140
Corequisites: None
This course covers semiconductor devices and circuits as they apply to the area of electronic servicing. Topics include semiconductor theory, diodes, transistors, linear integrated circuits, biasing, amplifiers, power supplies, and other related topics. Upon completion, students should be able to construct, verify, analyze, and troubleshoot semiconductor circuits.

ELN 141 Digital Fundamentals **4 6 6**
Prerequisites: None
Corequisites: None
This course covers combinational and sequential logic circuits. Topics include number systems, logic elements, Boolean algebra, Demorgan's theorem, logic families, flip flops, registers, counters, and other related topics. Upon completion, students should be able to analyze, verify, and troubleshoot digital circuits.

ELN 143 Television Servicing **4 6 6**
Prerequisites: ELN 140
Corequisites: None
This course provides a detailed study of the operation and repair of television receiver systems. Topics include operation, alignment, and repair of television receiver systems. Upon completion, students should be able to troubleshoot, maintain, and repair television receiver systems.

ELN 152 Fabrication Techniques **1 3 2**

Prerequisites: None

Corequisites: None

This course covers the fabrication methods required to create a prototype product from the initial circuit design. Topics include CAD, layout, sheet metal working, component selection, wire wrapping, PC board layout and construction, reverse engineering, soldering, and other related topics. Upon completion, students should be able to design and construct an electronic product with all its associated documentation.

ELN 154 Introduction to Data Comm **2 3 3**

Prerequisites: ELN 133

Corequisites: None

This course introduces the principal elements and theory (analog and digital techniques) of data communication systems and how they are integrated as a complete network. Topics include an overview of data communication, OSI model, transmission modes, serial and parallel interfaces, applications of ICs, protocols, network configurations, modems, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with data communication systems and high speed networks.

ELN 232 Introduction to Microprocessors **3 3 4**

Prerequisites: ELN 133

Corequisites: None

This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing. Topics include assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, interrupts, and other related topics. Upon completion, students should be able to interpret, analyze, verify, and troubleshoot fundamental microprocessor circuits and programs using appropriate techniques and test equipment.

ELN 234 Communication Systems **3 3 4**

Prerequisites: ELN 132 or ELN 140

Corequisites: None

This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitters and receivers, and digital communications. Upon completion, students should be able to interpret analog and digital communication circuit diagrams, analyze transmitter and receiver circuits, and use appropriate communication test equipment.

ELN 237 Local Area Networks **2 3 0 3**

Prerequisites: CIS 110, CIS 111, or CET 111

Corequisites: None

This course introduces the fundamentals of local area networks and their operation in business and computer environments. Topics include the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN. Upon completion, students should be able to install, maintain, and manage a local area network.

ELN 238 Advanced LANs **2 3 0 3**
Prerequisites: ELN 237
Corequisites: None
This course covers advanced concepts, tools, and techniques associated with servers, workstations, and overall local area network performance. Topics include network security and configuration, system performance and optimization, communication protocols and packet formats, troubleshooting techniques, multi-platform integration, and other related topics. Upon completion, students should be able to use advanced techniques to install, manage, and troubleshoot networks and optimize server and workstation performance.

ELN 242 Audio Servicing **2 3 3**
Prerequisites: ELC 140
Corequisites: ELN 140
This course covers the installation, maintenance, troubleshooting, and repair of consumer audio equipment. Topics include the theory, operation, and maintenance of audio equipment. Upon completion, students should be able to maintain, troubleshoot, and repair consumer audio equipment.

ELN 247 Electronic App Project **1 3 2**
Prerequisites: ELN 131 or ELN 140
Corequisites: None
This course provides a structured approach to an application-oriented electronics project. Emphasis is placed on selecting, planning, implementing, testing, and presenting an application-oriented project. Upon completion, students should be able to present and demonstrate an electronics application-oriented project.

ELN 260 Programmable Logic Controllers **3 3 4**
Prerequisites: None
Corequisites: None
This course provides a detailed study of PLC applications, with a focus on design of industrial control circuits using the PLC. Topics include PLC components, memory organization, math instructions, programming documentation, input/output devices, and applying PLCs in the design of industrial control systems. Upon completion, students should be able to design and program a PLC system to perform a wide variety of industrial control functions.

ELN 275 Troubleshooting **1 2 2**
Prerequisites: None
Corequisites: ELN 133 or ELN 141
This course covers techniques of analyzing and repairing failures in electronic equipment. Topics include safety, signal tracing, use of service manuals, and specific troubleshooting methods for analog, digital, and other electronics-based circuits and systems. Upon completion, students should be able to logically diagnose and isolate faults and perform necessary repairs to meet manufacturers' specifications.

Emergency Medical Science

EMS 110 EMT — Basic **4 6 0 6**
Prerequisites: Enrollment in EMS program or departmental approval
Corequisites: EMS 111
This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the skills necessary for the EMT-Basic certification.

EMS 111 Prehospital Environment **2 2 0 3**
Prerequisites: Enrollment in EMS program or departmental approval
Corequisites: EMS 110
This course introduces the prehospital care environment and is required for all levels of EMT certification. Topics include roles, responsibilities, laws, ethics, communicable diseases, hazardous materials recognition, therapeutic communications, EMS systems, and defense tactics. Upon completion of EMS 110 and EMS 111, students should be able to demonstrate competencies and skills necessary to achieve EMT-Basic certification.

EMS 115 Defense Tactics for EMS **1 3 0 2**
Prerequisites: None
Corequisites: None
This course is designed to provide tactics that can be used for self-protection in dangerous and violent situations. Emphasis is placed on prediction, recognition, and response to dangerous and violent situations. Upon completion, students should be able to recognize potentially hostile situations and protect themselves during a confrontation.

EMS 120 Intermediate Interventions **2 3 0 3**
Prerequisites: EMS 110, EMS 111, and BIO 168, or departmental approval
Corequisites: EMS 121 or EMS 122 and COE 111, EMS 130, EMS 131, and BIO 169
This course is designed to provide the necessary information for interventions appropriate to the EMT-Intermediate, and is required for intermediate certification. Topics include automated external defibrillation, basic cardiac electrophysiology, intravenous therapy, venipuncture, acid-base balance, and fluids and electrolytes. Upon completion, students should be able to properly establish an IV line, obtain venous blood, utilize AED's, and correctly interpret arterial blood gases. Current N.C. EMT certification is required for students enrolling in this course.

EMS 121 EMS Clinical Practicum I **0 0 6 2**
Prerequisites: EMS 110, EMS 111, and BIO 168, or departmental approval
Corequisites: EMS 120, EMS 130, EMS 131, and BIO 169
This course is the initial hospital and field internship and is required for intermediate and paramedic certification. Emphasis is placed on intermediate-level care. Upon completion, students should be able to demonstrate competence with intermediate-level skills. Current N.C. EMT certification is required for students enrolling in this course.

EMS 125 EMS Instructor Methodology **1 2 0 2**
Prerequisites: None
Corequisites: None
This course covers the information needed to develop and instruct EMS courses. Topics include instructional methods, lesson plan development, time management skills, and theories of adult learning. Upon completion, students should be able to teach EMS courses and meet the North Carolina EMS requirements for instructor methodology.

EMS 130 Pharmacology for EMS **1 3 0 2**
Prerequisites: EMS 110, EMS 111, and BIO 168, or departmental approval
Corequisites: EMS 120, EMS 131, and BIO 169
This course introduces the fundamental principles of pharmacology and medication administration and is required for intermediate and paramedic certification. Topics include terminology, pharmacokinetics, pharmacodynamics, weights, measures, drug calculations, legislation, and administration routes. Upon completion, students should be able to accurately calculate drug dosages, properly administer medications, and demonstrate general knowledge of pharmacology.

EMS 131 Advanced Airway Management **1 2 0 2**
Prerequisites: EMS 110, EMS 111, and BIO 168, or departmental approval
Corequisites: EMS 120 and EMS 130
This course is designed to provide advanced airway management techniques and is required for intermediate and paramedic certification. Topics include respiratory anatomy and physiology, airway, ventilation, adjuncts, surgical intervention, and rapid sequence intubation. Upon completion, students should be able to properly utilize all airway adjuncts and pharmacology associated with airway control and maintenance.

EMS 140 Rescue Scene Management **1 6 0 3**
Prerequisites: Enrollment in EMS program or departmental approval
Corequisites: None
This course introduces rescue scene management and is required for paramedic certification. Topics include response to hazardous material conditions, medical incident command, and extrication of patients from a variety of situations. Upon completion, students should be able to recognize and manage rescue operations based upon initial and follow-up scene assessment. Skills will include vehicle extrication, water rescue, rescue from heights, and confined space rescue.

EMS 150 Vehicle Operations and EMS Communication **1 3 0 2**
Prerequisites: Enrollment in EMS program or departmental approval
Corequisites: None
This course examines the principles governing maintenance of emergency vehicles and EMS communication equipment and is required for paramedic certification. Topics include applicable motor vehicle laws affecting emergency vehicle operation, defensive driving, collision avoidance techniques, communication systems, and information management systems. Upon completion, students should have a basic knowledge of emergency vehicles, maintenance, and communication needs.

EMS 210 Advanced Patient Assessment **1 3 0 2**
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or COE 111 and EMS 122
Corequisites: None
This course covers advanced patient assessment techniques and is required for paramedic certification. Topics include initial assessment, medical-trauma history, field impression, complete physical exam process, on-going assessment, and documentation skills. Upon completion, students should be able to utilize basic communication skills and record and report collected patient data.

EMS 220 Cardiology **2 6 0 4**
Prerequisites: EMS 120, EMS 121, EMS 130, and EMS 131
Corequisites: EMS 221
This course provides an in-depth study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, rhythm interpretation, cardiac pharmacology, and patient treatment. Upon completion, students should be able to certify at the Advanced Cardiac Life Support provider level utilizing American Heart Association Guidelines. In addition, the course provides instruction in the use of various cardiac monitoring devices.

EMS 221 EMS Clinical Practicum II **0 0 9 3**
Prerequisites: EMS 121 or EMS 122 and COE 111, EMS 120, EMS 130, and EMS 131
Corequisites: EMS 210 and EMS 220
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

EMS 231 EMS Clinical Practicum III **0 0 9 3**
Prerequisites: EMS 221 or EMS 222 and COE 121, EMS 220, and EMS 210
Corequisites: EMS 250 and EMS 260
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. Current N.C. EMT certification is required for students enrolling in this course.

EMS 235 EMS Management **2 0 0 2**
Prerequisites: Enrollment in EMS program or departmental approval
Corequisites: None
This course stresses the principles of managing a modern emergency medical service system. Topics include structure and function of municipal governments, EMS grantsmanship, finance, regulatory agencies, system management, legal issues, and other topics relevant to the EMS manager. Upon completion, students should be able to understand the principles of managing emergency medical service delivery systems.

EMS 240 Special Needs Patients **1 3 0 2**
Prerequisites: EMS 120, EMS 121, EMS 130, and EMS 131, or departmental approval
Corequisites: EMS 241
This course includes concepts of crisis intervention and techniques of dealing with special needs patients and is required for paramedic certification. Topics include behavioral emergencies, abuse, assault, challenged patients, personal well-being, home care, and psychotherapeutic pharmacology. Upon completion, students should be able to recognize and manage frequently encountered special needs patients.

EMS 241 EMS Clinical Practicum IV **0 0 9 3**
Prerequisites: EMS 231 or EMS 232 and COE 131, EMS 250, and EMS 260
Corequisites: EMS 240, EMS 270, and EMS 285
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to provide advanced-level patient care as an entry-level paramedic. Current N.C. EMT certification is required for students enrolling in this course.

EMS 250 Advanced Medical Emergencies 2 3 0 3
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or COE 111, EMS 122, EMS 210, EMS 220, and EMS 221
Corequisites: EMS 231
This course presents an in-depth study of medical conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include pulmonology, neurology, endocrinology, anaphylaxis, gastroenterology, toxicology, and environmental emergencies integrating case presentation and emphasizing pharmacotherapeutics. Upon completion, students should be able to recognize and manage frequently encountered medical conditions based upon initial patient impression.

EMS 260 Advanced Trauma Emergencies 1 3 0 2
Prerequisites: EMS 120, EMS 130, EMS 131, and either EMS 121 or COE 111 and EMS 122, EMS 210, EMS 220, and EMS 221
Corequisites: EMS 231
This course presents in-depth study of trauma including pharmacological interventions for conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include hemorrhage control, shock, burns, and trauma to head, spine, soft tissue, thoracic, abdominal, and musculoskeletal areas with case presentations utilized for special problems situations. Upon completion, students should be able to recognize and manage trauma situations based upon patient impressions and should meet requirements of BTLS or PHTLS courses.

EMS 270 Life Span Emergencies 2 2 0 3
Prerequisites: EMS 120, EMS 130 and EMS 131, EMS 250, EMS 260, and EMS 231
Corequisites: EMS 241
This course, required for paramedic certification, covers medical/ethical/legal issues and the spectrum of age-specific emergencies from conception through death. Topics include gynecological, obstetrical, neonatal, pediatric, and geriatric emergencies and pharmacological therapeutics. Upon completion, students should be able to recognize and treat age-specific emergencies and certify at the Pediatric Advanced Life Support provider level.

EMS 280 EMS Bridging Course 2 2 0 3
Prerequisites: Enrollment in EMS Program or Department approval
Corequisites: None
This course is designed to bridge the knowledge gained in a continuing education paramedic program with the knowledge gained in an EMS curriculum program. Topics include patient assessment, documentation, twelve-lead ECG analysis, thrombolytic agents, cardiac pacing, and advanced pharmacology. Upon completion, students should be able to perform advanced patient assessment documentation using the problem-oriented medical record format and manage complicated patients.

EMS 285 EMS Capstone 1 3 0 2
Prerequisites: EMS 220, EMS 231, EMS 250, and EMS 260
Corequisites: EMS 241
This course provides an opportunity to demonstrate problem-solving skills as a team leader in simulated patient scenarios and is required for paramedic certification. Emphasis is placed on critical thinking, integration of didactic and psychomotor skills, and effective performance in simulated emergency situations. Upon completion, students should be able to recognize and appropriately respond to a variety of EMS related events.

English

ENG 080 Writing Foundations **3 2 4**
Prerequisites: ENG 070 or ENG 075 or placement
Corequisites: None
This course introduces the writing process and stresses effective sentences. Emphasis is placed on applying the conventions of written English, reflecting standard usage and mechanics in structuring a variety of sentences. Upon completion, students should be able to write correct sentences and a unified, coherent paragraph. *This course does not satisfy the developmental writing prerequisite for ENG 111.*

ENG 085 Reading and Writing Foundations **5 0 5**
Prerequisites: ENG 070 and RED 070 or ENG 075 or placement
Corequisites: None
This course uses whole language to develop proficiency in reading and writing for college. Emphasis is placed on applying analytical and critical reading skills to a variety of texts and on introducing the writing process. Upon completion, students should be able to recognize and use various patterns of text organization and compose effective paragraphs. *This course integrates ENG 080 and RED 080. This course does not satisfy the developmental writing prerequisite for ENG 111.*

ENG 085A Reading and Writing Foundations Lab **0 2 1**
Prerequisites: ENG 070 and RED 070 or ENG 075
Corequisites: ENG 085
This laboratory provides the opportunity to practice the skills introduced in ENG 085. Emphasis is placed on practical skills for applying analytical and critical reading skills to a variety of texts and on the writing process. Upon completion, students should be able to apply those skills in the production of effective paragraphs.

ENG 090 Composition Strategies **3 0 3**
Prerequisites: ENG 080 or ENG 085 or placement
Corequisites: ENG 090A
This course provides practice in the writing process and stresses effective paragraphs. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay. *This course, with ENG 090A, satisfies the developmental writing prerequisite for ENG 111.*

ENG 090A Composition Strategies Lab **0 2 1**
Prerequisites: ENG 080 or ENG 085
Corequisites: ENG 090
This writing lab is designed to practice the skills introduced in ENG 090. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay.

ENG 102 Applied Communications II **3 0 3**
Prerequisites: None
Corequisites: None
This course is designed to enhance writing and speaking skills for the workplace. Emphasis is placed on generating short writings such as job application documents, memoranda, and reports and developing interpersonal communication skills with employees and the public. Upon completion, students should be able to prepare effective, short, and job-related written and oral communications. *This is a diploma-level course.*

ENG 111 Expository Writing **3 0 3**
Prerequisites: ENG 090, ENG 090A, RED 090, or placement test
Corequisites: None
This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.*

ENG 112 Argument-Based Research **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course, the second in a series of two, introduces research techniques, documentation styles, and argumentative strategies. Emphasis is placed on analyzing data and incorporating research findings into documented argumentative essays and research projects. Upon completion, students should be able to summarize, paraphrase, interpret, and synthesize information from primary and secondary sources using standard research format and style. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.*

ENG 113 Literature-Based Research **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.*

ENG 114 Professional Research and Reporting **3 0 3**
Prerequisites: ENG 111
Corequisites: Admission to a Major Program (other than General Occupational Technology) or English Department approval
This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. Students entering this course should be able to demonstrate in-depth knowledge in a technical field and should anticipate interdepartmental evaluation of course projects. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English Composition.*

ENG 125 Creative Writing I **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course is designed to provide students with the opportunity to practice the art of creative writing. Emphasis is placed on writing fiction, poetry, and sketches. Upon completion, students should be able to craft and critique their own writing and critique the writing of others. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ENG 126 Creative Writing II **3 0 3**
Prerequisites: ENG 125
Corequisites: None
This course is designed as a workshop approach for advancing imaginative and literary skills. Emphasis is placed on the discussion of style, techniques, and challenges for first publications. Upon completion, students should be able to submit a piece of their writing for publication. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ENG 131 Introduction to Literature **3 0 3**
Prerequisites: ENG 111
Corequisites: ENG 112, ENG 113, or ENG 114
This course introduces the principal genres of literature. Emphasis is placed on literary terminology, devices, structure, and interpretation. Upon completion, students should be able to analyze and respond to literature. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ENG 231 American Literature I **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course requires a research paper. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ENG 232 American Literature II **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course covers selected works in American literature from 1865 to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course requires a research paper. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ENG 241 British Literature I **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course covers selected works in British literature from its beginnings to the Romantic Period. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. Reading and writing about an eighteenth century novel is required. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ENG 242 British Literature II **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course covers selected works in British literature from the Romantic Period to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. Reading and writing about a nineteenth century novel is required. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ENG 253 The Bible as Literature **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course introduces the Hebrew Old Testament and the Christian New Testament as works of literary art. Emphasis is placed on the Bible's literary aspects including history, composition, structure, and cultural contexts. Upon completion, students should be able to identify and analyze selected books and passages using appropriate literary conventions. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

ENG 261 World Literature I **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from their literary beginnings through the 17th century. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ENG 262 World Literature II **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from the 18th century to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

ENG 274 Literature by Women **3 0 3**
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course provides an analytical study of the works of several women authors. Emphasis is placed on the historical and cultural contexts, themes and aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Fire Protection Technology

FIP 120 Introduction to Fire Protection **2 0 2**
Prerequisites: None
Corequisites: None
This course provides an overview of the history, development, methods, systems, and regulations as they apply to the fire protection field. Topics include history, evolution, statistics, suppression, organizations, careers, curriculum, and other related topics. Upon completion, students should be able to demonstrate a broad understanding of the fire protection field.

FIP 124 Fire Prevention & Public Education **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces fire prevention concepts as they relate to community and industrial operations. Topics include the development and maintenance of fire prevention programs, educational programs, and inspection programs. Upon completion, students should be able to research, develop, and present a fire safety program to a citizens or industrial group.

FIP 128 Detection and Investigation **3 0 3**
Prerequisites: None
Corequisites: None
This course covers procedures for determining the origin and cause of accidental and incendiary fires. Topics include collection and preservation of evidence, detection and determination of accelerants, courtroom procedure and testimony, and documentation of the fire scene. Upon completion, students should be able to conduct a competent fire investigation and present those findings to appropriate officials or equivalent.

FIP 132 Building Construction 3 0 3
Prerequisites: None
Corequisites: None
This course covers the principles and practices related to various types of building construction, including residential and commercial, as impacted by fire conditions. Topics include types of construction and related elements, fire resistive aspects of construction materials, building codes, collapse, and other related topics. Upon completion, students should be able to understand and recognize various types of construction and their positive or negative aspects as related to fire conditions.

FIP 136 Inspections and Codes 3 0 3
Prerequisites: None
Corequisites: None
This course covers the fundamentals of fire and building codes and procedures to conduct an inspection. Topics include review of fire and building codes, writing inspection reports, identifying hazards, plan reviews, site sketches, and other related topics. Upon completion, students should be able to conduct a fire code compliance inspection and produce a written report.

FIP 140 Industrial Fire Protection 2 0 2
Prerequisites: None
Corequisites: None
This course covers fire protection systems in industrial facilities. Topics include applicable health and safety standards, insurance carrier regulations, other regulatory agencies, hazards of local industries, fire brigade operation, and loss prevention programs. Upon completion, students should be able to prepare a procedure to plan, organize, and evaluate an industrial facility's fire protection.

FIP 144 Sprinklers and Auto Alarms 2 2 3
Prerequisites: None
Corequisites: None
This course introduces various types of automatic sprinklers, standpipes, and fire alarm systems. Topics include wet or dry systems, testing and maintenance, water supply requirements, fire detection and alarm systems, and other related topics. Upon completion, students should be able to demonstrate a working knowledge of various sprinkler and alarm systems and required inspection and maintenance.

FIP 152 Fire Protection Law 2 0 2
Prerequisites: None
Corequisites: None
This course covers fire protection law. Topics include torts, legal terms, contracts, liability, review of case histories, and other related topics. Upon completion, students should be able to discuss laws, codes, and ordinances as they relate to fire protection.

FIP 220 Fire Fighting Strategies 3 0 3
Prerequisites: None
Corequisites: None
This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/ control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations.

FIP 224 Instructional Methodology **4 0 4**
Prerequisites: None
Corequisites: None
This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet all requirements of NFPA 1041 Fire Service Instructor Level Two.

FIP 228 Local Government Finance **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces local governmental financial principles and practices. Topics include budget preparation and justification, revenue policies, statutory requirements, taxation, audits, and the economic climate. Upon completion, students should be able to comprehend the importance of finance as it applies to the operation of a department.

FIP 230 Chemistry of Hazardous Materials I **5 0 5**
Prerequisites: None
Corequisites: None
This course covers the evaluation of hazardous materials. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials.

FIP 232 Hydraulics & Water Distribution **2 2 3**
Prerequisites: MAT 115
Corequisites: None
This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics. Upon completion, students should be able to perform hydraulic calculations, conduct water availability tests, and demonstrate knowledge of water distribution systems.

FIP 240 Fire Service Supervision **2 0 2**
Prerequisites: None
Corequisites: None
This course covers supervisory skills and practices in the fire protection field. Topics include the supervisor's job, supervision skills, the changing work environment, managing change, organizing for results, discipline and grievances, and loss control. Upon completion, students should be able to demonstrate an understanding of the roles and responsibilities of the effective fire service supervisor.

FIP 252 Apparatus Specification and Purchase **2 0 2**
Prerequisites: None
Corequisites: None
This course covers the specification and purchase of fire apparatus. Emphasis is placed on NFPA standards for apparatus, recommended types of fire apparatus, purchase and bidding procedures, and the importance of specifications. Upon completion, students should be able to make internal decisions, write specifications, and make recommendations for the purchase of major capital equipment.

FIP 256 Municipal Public Relations 2 0 2
Prerequisites: None
Corequisites: None
This course is a general survey of municipal public relations and their effect on the governmental process. Topics include principles of public relations, press releases, press conferences, public information officers, image surveys, and the effects of perceived service on fire protection delivery. Upon completion, students should be able to manage the public relations functions of a fire service organization.

FIP 260 Fire Protection Planning 3 0 3
Prerequisites: None
Corequisites: None
This course covers the need for a comprehensive approach to fire protection planning. Topics include the planning process, using an advisory committee, establishing goals and objectives, and techniques used to approve and implement a plan. Upon completion, students should be able to demonstrate a working knowledge of the concepts and principles of planning as it relates to fire protection.

FIP 276 Managing Fire Services 3 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of fire department operative services. Topics include finance, staffing, equipment, code enforcement, management information, specialized services, legal issues, planning, and other related topics. Upon completion, students should be able to understand concepts and apply fire department management and operations principles.

French

FRE 111 Elementary French I 3 0 3
Prerequisites: None
Corequisites: None
This course introduces the fundamental elements of the French language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. Lab practice is expected of students. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

FRE 112 Elementary French II 3 0 3
Prerequisites: FRE 111
Corequisites: None
This course is a continuation of FRE 111 focusing on the fundamental elements of the French language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate further cultural awareness. Lab practice is expected of students. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

FRE 211 Intermediate French I **3 0 3**
Prerequisites: FRE 112
Corequisites: None
This course provides a review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. Lab practice is expected of students. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

FRE 212 Intermediate French II **3 0 3**
Prerequisites: FRE 211
Corequisites: None
This course is a continuation of FRE 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. Lab practice is expected of students. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

Geography

GEO 111 World Regional Geography **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the regional concept which emphasizes the spatial association of people and their environment. Emphasis is placed on the physical, cultural, and economic systems that interact to produce the distinct regions of the earth. Upon completion, students should be able to describe variations in physical and cultural features of a region and demonstrate an understanding of their functional relationships. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

GEO 112 Cultural Geography **3 0 3**
Prerequisites: None
Corequisites: None
This course is designed to explore the diversity of human cultures and to describe their shared characteristics. Emphasis is placed on the characteristics, distribution, and complexity of earth's cultural patterns. Upon completion, students should be able to demonstrate an understanding of the differences and similarities in human cultural groups. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

German

GER 111 Elementary German I **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the fundamental elements of the German language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written German and demonstrate cultural awareness. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

GER 112 Elementary German II **3 0 3**
Prerequisites: GER 111
Corequisites: None
This course is a continuation of GER 111 focusing on the fundamental elements of the German language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written German and demonstrate further cultural awareness. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

GER 141 Culture and Civilization **3 0 3**
Prerequisites: None
Corequisites: None
This course, taught in English, provides an opportunity to explore issues related to the German-speaking world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the German-speaking world. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

GER 211 Intermediate German I **3 0 3**
Prerequisites: GER 112
Corequisites: None
This course provides a review and expansion of the essential skills of the German language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

GER 212 Intermediate German II **3 0 3**
Prerequisites: GER 211
Corequisites: None
This course is a continuation of GER 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

GER 221 German Conversation **3 0 3**
Prerequisites: GER 212
Corequisites: None
This course provides an opportunity for intensive communication in spoken German. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Health

HEA 110 Personal Health/Wellness **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an introduction to basic personal health and wellness. Emphasis is placed on current health issues such as nutrition, mental health, and fitness. Upon completion, students should be able to demonstrate an understanding of the factors necessary to the maintenance of health and wellness. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

HEA 112 First Aid and CPR **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces the basics of emergency first aid treatment. Topics include rescue breathing, CPR, first aid for choking and bleeding, and other first aid procedures. Upon completion, students should be able to demonstrate skills in providing emergency care for the sick and injured until medical help can be obtained. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

HEA 120 Community Health **3 0 3**
Prerequisites: None
Corequisites: None
This course provides information about contemporary community health and school hygiene issues. Topics include health education and current information about health trends. Upon completion, students should be able to recognize and devise strategies to prevent today's community health problems. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Heavy Equipment and Transport Technology

***HET 110 Diesel Engines** **3 9 6**
Prerequisites: None
Corequisites: HET 118
This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines.

***HET 112 Diesel Electrical Systems** **3 6 5**
Prerequisites: None
Corequisites: HET 118 or Department chair approval
This course introduces electrical theory and applications as they relate to diesel powered equipment. Topics include lighting, accessories, safety, starting, charging, instrumentation, and gauges. Upon completion, students should be able to follow schematics to identify, repair, and test electrical circuits and components.

***HET 114 Power Trains** **3 6 5**
Prerequisites: HET 118 or Department chair approval
Corequisites: None
This course introduces power transmission devices. Topics include function and operation of gears, chains, clutches, planetary gears, drive lines, differentials, and transmissions. Upon completion, students should be able to identify, research specifications, repair, and adjust power train components.

***HET 115 Electronic Engines** **2 3 3**
Prerequisites: HET 118 or Department chair approval
Corequisites: HET 112
This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturers' specifications. Upon completion, students should be able to diagnose, test, and calibrate electronically controlled diesel engines.

***HET 116 Air Conditioning/Diesel Equipment** **1 2 2**
Prerequisites: HET 118 or Dept. Chair approval
Corequisites: None
This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air conditioning systems according to industry standards.

***HET 118 Mechanical Orientation** **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the care and safe use of power and hand tools. Topics include micrometers, dial indicators, torque wrenches, drills, taps, dies, screw extractors, thread restorers, and fasteners. Upon completion, students should be able to select and properly use tools for various operations.

***HET 119 Mechanical Transmissions** **2 2 3**
Prerequisites: HET 118 or Dept. Chair approval
Corequisites: None
This course introduces the operating principles of mechanical medium and heavy duty truck transmissions. Topics include multiple counter shafts, power take-offs, sliding idler clutches, and friction clutches. Upon completion, students should be able to diagnose, inspect, and repair mechanical transmissions.

***HET 125 Preventive Maintenance** **1 3 2**
Prerequisites: None
Corequisites: HET 118
This course introduces preventive maintenance practices used on medium and heavy duty vehicles and rolling assemblies. Topics include preventive maintenance schedules, services, DOT rules and regulations, and roadability. Upon completion, students should be able to set up and follow a preventive maintenance schedule as directed by manufacturers.

***HET 128 Medium/Heavy Duty Tune Up** **1 2 2**
Prerequisites: HET 118 or Dept. Chair approval
Corequisites: None
This course introduces tune-up and troubleshooting according to manufacturers' specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, students should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment.

***HET 231 Medium/Heavy Duty Brake Systems** **1 3 2**
Prerequisites: HET 118 or Dept. Chair approval
Corequisites: None
This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis and repair. Upon completion, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.

***HET 233 Suspension and Steering** **2 4 4**
Prerequisites: HET 118 or Dept. Chair approval
Corequisites: None
This course introduces the theory and principles of medium and heavy duty steering and suspension systems. Topics include wheel and tire problems, frame members, fifth wheel, bearings, and coupling systems. Upon completion, students should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.

History

HIS 111 World Civilizations I **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

HIS 112 World Civilizations II **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

HIS 115 Introduction to Global History **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the study of global history. Emphasis is placed on topics such as colonialism industrialism, and nationalism. Upon completion, students should be able to analyze significant global historical issues. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

HIS 131 American History I **3 0 3**
Prerequisites: None
Corequisites: None
This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

HIS 132 American History II **3 0 3**
Prerequisites: None
Corequisites: None
This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

HIS 162 Women and History **3 0 3**
Prerequisites: None
Corequisites: None
This course surveys the experience of women in historical perspective. Topics include the experiences and contributions of women in culture, politics, economics, science, and religion. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural contributions of women in history. This course covers American women from colonial times to the present. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

HIS 227 Native American History **3 0 3**
Prerequisites: None
Corequisites: None
This course surveys the history and cultures of Native Americans from pre-history to the present. Topics include Native American civilizations, relations with Europeans, and the continuing evolution of Native American cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments among Native Americans. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

HIS 236 North Carolina History **3 0 3**
Prerequisites: None
Corequisites: None
This course is a study of geographical, political, economic, and social conditions existing in North Carolina from America's discovery to the present. Topics include native and immigrant backgrounds; colonial, antebellum, and Reconstruction periods; party politics; race relations; and the transition from an agrarian to an industrial economy. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in North Carolina. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Health Information Technology*

*Pending NCCCS State Board approval

HIT 110 Health Information Orientation **2 0 0 2**
Prerequisites: None
Corequisites: None
This course introduces health information management and its role in health care delivery systems. Emphasis is placed on the role and responsibilities of health information professionals in a variety of settings. Upon completion, students should be able to demonstrate an understanding of health information management and health care organizations, professions and trends.

HIT 112 Health Law and Ethics **3 0 0 3**
Prerequisites: None
Corequisites: None
This course covers the impact of legal issues on health information management and provides an overview of the judicial system and legislative process. Topics include confidentiality, release of information, record retention, authentication, informed consent, subpoenaed information, security of computerized health information, liability, and legislative trends. Upon completion, students should be able to respond appropriately to requests for health information.

HIT 114 Record Systems/Standards **2 3 0 3**
Prerequisites: Enrollment in Health Information Technology Program
Corequisites: None
This course covers basic concepts and techniques for managing and maintaining health record systems. Topics include health record content, qualitative analysis, format, record control, storage, retention, forms design/control, indices, and registers, and numbering and filing systems. Upon completion, students should be able to demonstrate an understanding of health record systems, including their maintenance and control.

HIT 124 Directed Practice II **1 0 3 2**
Prerequisites: Enrollment in Health Information Technology program, CIS 110, HIT 212
Corequisites: None
This course provides supervised clinical experience in health care settings. Emphasis is placed on practical application of curriculm concepts to the health care setting. Upon completion, students should be able to apply health information theory to health care facility practices.

HIT 210 Health Care Statistics **3 2 0 4**
Prerequisites: MAT 110 or MAT 140 and MAT 140A
Corequisites: None
This course covers maintenance, compilation, analysis, and presentation of health care statistics. Topics include basic statistical principles, morbidity and mortality, commonly computed hospital rates, uniform reporting requirements, and selection and construction of data displays. Upon completion, students should be able to calculate morbidity, mortality, and commonly computed hospital rates; comply with inform reporting requirements; and analyze/present statistical data.

HIT 212 Coding/Classification I **3 3 0 4**
Prerequisites: MED 121
Corequisites: None
This course is the first of a two-course sequence which provides a foundation in coding and classification systems in a variety of health care settings. Emphasis is placed on ICD-9-CM coding conventions, rules, methodology and sequencing, data sets, documentation requirements, information indexing and retrieval, quality control, and coding resources. Upon completion, students should be able to apply coding principles to correctly assign ICD-9-CM.

HIT 214 Coding/Classification II **3 3 0 4**
Prerequisites: HIT 212
Corequisites: None
This course is the second of a two-course sequence which continues the study of coding and classification systems in a variety of health care settings. Topics include classification and coding systems emphasizing ICD-9-CM, HCPCS/CPT-4, reimbursement/billing systems, encoders/groupers, case mix management, and coding's relationship to managed care. Upon completion, students should be able to apply coding principles to correctly assign ICD-9-CM and HCPCS/CPT-4 codes and apply systems to optimize reimbursement.

HIT 216 Quality Management **2 2 0 3**
Prerequisites: None
Corequisites: None
This course introduces principles of quality improvement, utlilization management, and risk management in health care. Topics include the continuous quality improvement philosophy, including tools, data analysis/application, and related committee functions; utilization management and risk management; and credentialing, accreditation, and regulation. Upon completion, students should be able to apply performance improvement techniques, analyze/display data, apply level of care criteria, and participate in risk management activities.

HIT 218 Management **3 0 0 3**
Prerequisites: None
Corequisites: None
This course covers management and supervision pronciples as applied to health care settings. Emphasis is placed on problem-solving and communication skills related to planning, organization, directing, controlling and budgeting. Upon completion, students should be able to apply management and supervision principles to health care settings.

HIT 220 Computers in Health Care **1 2 0 2**
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course covers basic computer system architecture, file structure, and design for health care settings. Topics include system analysis, design, security, and selection for a variety of hardware environments. Upon completion, students should be able to design, implement, evaluate, and maintain automated information systems in health care.

HIT 222 Directed Practice III **0 0 6 2**
Prerequisites: Enrollment in Health Information Technology program, HIT 124
Corequisites: None
This course provides supervised clinical experience in health care settings. Emphasis is placed on practical applicaiton of curriculm concepts to the health care setting. Upon completion, students should be able to apply health information theory to health care facility practices.

HIT 224 Directed Practice IV **1 0 6 3**
Prerequisites: Enrollement in Health Information Technology program, HIT 222
Corequisites: None
This course provides supervised clinical experience in health care settings. Emphasis is placed on practical applicaiton of curriculm concepts to the health care setting. Upon completion, students should be able to apply health information theory to health care facility practices.

HIT 226 Principles of Disease **3 0 0 3**
Prerequisites: BIO 166 or BIO 169
Corequisites: None
This course covers disease etiology and organ system involvement, including physical signs and symptoms, prognoses, and common complications and their management. Topics include basic microbiology, basic pharmacology, and principles of disease. Upon completion, students should be able to relate disease processes to etiology, physical signs and symptoms, prognosis, and common complications and their management.

HIT 280 Professional Issues **2 0 0 2**
Prerequisites: HIT 212
Corequisites: HIT 214
This course provides a comprehensive discussion of topics common to the health information profession. Emphasis is placed on application of professional competencies, job search tools, and preparation for the certification examination. Upon completion, students should be able to demonstrate competence in entry-level domains, tasks, and subtasks for health information technologies.

Hotel and Restaurant Management

HRM 110 Introduction to Hospitality **2 0 2**
Prerequisites: None
Corequisites: None
This course covers the growth and progress of the hospitality industry. Topics include financing, hotels, restaurants, and clubs. Upon completion, students should be able to demonstrate an understanding of the background, context, and career opportunities that exist in the hospitality industry.

***HRM 120 Front Office Procedures** **3 0 3**
Prerequisites: None
Corequisites: HRM 120A
This course provides a systematic approach to hotel front office procedures. Topics include reservations, registration, guest satisfaction, occupancy and rate management, security, interdepartmental communications, and related guest services. This course will also examine the housekeeping department of the hotel, its operation and management, and its working relationship with the front office.

***HRM 120A Front Office Procedures Lab** **0 2 1**
Prerequisites: CIS 110
Corequisites: HRM 120
This course is laboratory to accompany HRM 120. Emphasis is placed on practical computer applications of theory covered in HRM 120. Upon completion, students should be able to demonstrate a basic proficiency in computer-based, front office applications.

***HRM 130 Bed and Breakfast Management** **2 0 2**
Prerequisites: None
Corequisites: None
This course provides an overview of the management of bed and breakfast facilities. Emphasis is placed on lifestyle commitment, property needs, computer operations, business and marketing plans, customer service and facility management. Upon completion, students should be able to describe and apply the principles of management unique to the bed and breakfast industry.

***HRM 135 Facilities Management** **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the basic elements of planning and designing hospitality facilities, including their maintenance and upkeep. Topics include equipment and plant preventive maintenance, engineering, interior design, space utilization, remodeling and expansion, and traffic and workflow patterns. Upon completion, students should be able to demonstrate an understanding of the planning, design, and maintenance of hospitality physical plants and equipment.

***HRM 140 Hospitality Tourism Law** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the rights and responsibilities that the law grants to or imposes upon the hospitality industry. Topics include federal and state regulations, historical and current practices, safety and security, risk management, loss prevention, torts, and contracts. Upon completion, students should be able to demonstrate an understanding of the legal system to prevent or minimize organizational liability.

***HRM 145 Hospitality Supervision** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers principles of supervision as they apply to the hospitality industry. Topics include recruitment, selection, orientation, training, evaluation, and leadership skills. Upon completion, students should be able to understand and apply basic supervisory skills unique to the hospitality and service industry.

***HRM 192 Selected Topics in Dining Room Management** **1 2 2**
Prerequisites: None
Corequisites: CUL 142
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. This course will focus on the services offered in the dining room environment, including management.

***HRM 210 Meetings and Conventions** **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces organization, arrangement, and operation of conventions, trade shows, professional meetings, and food functions. Emphasis is placed on the methods of marketing, selling, and servicing conventions and trade shows and the division of administrative responsibilities in their operation. Upon completion, students should be able to describe and apply the principles of management to multi-function, multi-day conferences and events.

***HRM 215 Restaurant Management** **3 0 3**
Prerequisites: CUL 135, CUL 135A and HRM 192 or Departmental approval
Corequisites: HRM 215A
This course provides an overview of the various challenges and responsibilities encountered in managing a food and beverage operation. Topics include planning, administration, organization, accounting, marketing, and human resources from an integrated managerial viewpoint. Upon completion, students should be able to demonstrate an understanding of the operation of a restaurant.

***HRM 215A Restaurant Management Lab** **0 2 1**
Prerequisites: CUL 135, CUL 135A and HRM 192 or Departmental approval
Corequisites: HRM 215
This course is a laboratory to accompany HRM 215. Emphasis is placed on practical applications of restaurant management principles. Upon completion, students should be able to demonstrate a basic proficiency in restaurant management applications.

***HRM 220 Food and Beverage Control** **3 0 3**
Prerequisites: MAT 115
Corequisites: None
This course introduces controls and accounting procedures used in the hospitality industry. Topics include analysis of financial statements, reports, and costs. Upon completion, students should be able to understand and apply food, beverage, and labor cost control systems.

HRM 225 Beverage Management **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the management of beverage operations in a hospitality operation. Topics include history, service, procurement, storage, and control of wines, fermented and distilled beverages, sparkling waters, coffees, and teas. Upon completion, students should be able to demonstrate knowledge of the beverages consumed in a hospitality operation.

***HRM 240 Hospitality Marketing** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers planning, organizing, directing, and analyzing the results of marketing programs in the hospitality industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the hospitality industry.

***HRM 280 Hospitality Management Problems** **3 0 3**
Prerequisites: Successful completion of the first four semesters of the program
Corequisites: None
This course addresses current global, national, and local concerns and issues in the hospitality industry. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply hospitality management principles to real challenges facing industry managers. This course involves the student in a capstone project that will utilize the knowledge and practical experience from the previous semesters of the program.

Human Services

***HSE 110 Introduction to Human Services** **2 2 0 3**
Prerequisites: None
Corequisites: None
This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker.

***HSE 112 Group Process I** **1 2 0 2**
Prerequisites: Enrollment in the HSE program
Corequisites: None
This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings.

***HSE 123 Interviewing Techniques** **2 2 0 3**
Prerequisites: None
Corequisites: None
This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship.

***HSE 125 Counseling** **2 2 0 3**
Prerequisites: PSY 150
Corequisites: None
This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem-solving, decision-making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques.

***HSE 210 Human Services Issues** **2 0 0 2**
Prerequisites: Successful completion of 12 SHC in the HSE program
Corequisites: None
This course covers current issues and trends in the field of human services. Emphasis is placed on contemporary topics with relevance to special issues in a multifaceted field. Upon completion, students should be able to integrate the knowledge, skills, and experiences gained in classroom and clinical experiences with emerging trends in the field.

***HSE 220 Case Management** **2 2 0 3**
Prerequisites: HSE 110
Corequisites: None
This course covers the variety of tasks associated with professional case management. Topics include treatment planning, needs assessment, referral procedures, and follow-up and integration of services. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services.

***HSE 225 Crisis Intervention** **3 0 0 3**
Prerequisites: None
Corequisites: None
This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately.

Humanities

HUM 110 Technology and Society **3 0 3**
Prerequisites: None
Corequisites: None
This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

HUM 115 Critical Thinking **3 0 3**
Prerequisites: ENG 101 or ENG 111
Corequisites: None
This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

HUM 122 Southern Culture **3 0 3**
Prerequisites: None
Corequisites: None
This course explores the major qualities that make the South a distinct region. Topics include music, politics, literature, art, religion, race relations, and the role of social class in historical and contemporary contexts. Upon completion, students should be able to identify the characteristics that distinguish Southern culture. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

HUM 130 Myth in Human Culture **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an in-depth study of myths and legends. Topics include the varied source of myths and their influence on the individual and society within diverse cultural contexts. Upon completion, students should be able to demonsrate a general familiarity with myths and a broad-based understanding of the influence of myths and legends on modern culture. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

HUM 150 American Women's Studies **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an inter-disciplinary study of the history, literature, and social roles of American women from Colonial times to the present. Emphasis is placed on women's roles as reflected in American language usage, education, law, the workplace, and mainstream culture. Upon completion, students should be able to identify and analyze the roles of women as reflected in various cultural forms. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

HUM 160 Introduction to Film **2 2 3**
Prerequisites: None
Corequisites: None
This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. Attendance at five film showings and an in-depth written analysis of one film are required. Upon completion, students should be able to critically analyze the elements covered in relation to selected films. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

HUM 211 Humanities I **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

HUM 212 Humanities II **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from early modern times to the present. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

HUM 220 Human Values and Meaning **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course presents some major dimensions of human experience as reflected in art, music, literature, philosophy, and history. Topics include the search for identity, the quest for knowledge, the need for love, the individual and society, and the meaning of life. Upon completion, students should be able to recognize interdisciplinary connections and distinguish between open and closed questions and between narrative and scientific models of understanding. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

Hydraulics

***HYD 110 Hydraulics/Pneumatics I** **2 3 3**
Prerequisites: MAT 121 or MAT 161
Corequisites: None
This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

HYD 112 Hydraulics/Medium/Heavy Duty **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces hydraulic theory and applications as applied to mobile equipment. Topics include component studies such as pumps, motors, valves, cylinders, filters, reservoirs, lines, and fittings. Upon completion, students should be able to identify, diagnose, test, and repair hydraulic systems using schematics and technical manuals.

Industrial Science

ISC 121 Environmental Health and Safety **3 0 3**
Prerequisites: None
Corequisites: None
This course covers workplace environmental, health, and safety issues. Emphasis is placed on managing the implementation and enforcement of environmental health and safety regulations and on preventing accidents, injuries, and illnesses. Upon completion, students should be able to demonstrate an understanding of basic concepts of environmental, health, and safety issues.

ISC 131 Quality Management **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a study and analysis of the aspects and implications of quality management that lead to customer satisfaction through continuous quality improvement. Topics include Total Quality Management, ISO 9000, organizing for quality, supplier/vendor relationships, and the role of leadership in quality management. Upon completion, students should be able to demonstrate an understanding of quality management concepts and techniques.

ISC 132 Manufacturing Quality Control **2 3 3**
Prerequisites: None
Corequisites: None
This course introduces quality concepts and techniques used in industry. Topics include elementary statistics and probability, process control, process capability, and quality improvement tools. This course focuses on analyzing, improving, planning, controlling, and documenting processes and procedures. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality and apply them to the work environment.

ISC 210 Operations and Production Planning **3 0 3**
Prerequisites: Completion of curriculum mathematics requirement and ISC 221
Corequisites: None
This course includes the fundamentals of operations and production planning, forecasting, and scheduling. Topics include demand management, production planning and control, scheduling, and budgeting. Upon completion, students should be able to demonstrate an understanding of the concepts and techniques involved in operations and production planning. *This course is a unique concentration requirement of the Operations Management concentration in the Business Administration program.*

ISC 212 Metrology **1 2 2**
Prerequisites: None
Corequisites: None
This course covers the principles and techniques of modern practical metrology and inspection methods. Topics include precision, accuracy, standards, and calibration. Upon completion, students should be able to perform various roles within a metrology system.

ISC 221 Statistical Quality Control **3 0 3**
Prerequisites: Completion of curriculum mathematics requirement
Corequisites: None
This course covers the principles and techniques of statistical process control for the improvement of productivity. Emphasis is placed on basic statistics for quality control, organization and procedures for efficient quality control including inspections, process control, and tests of significance. Upon completion, students should be able to apply statistical principles and techniques to enhance production.

ISC 277 Quality Technology **4 0 4**
Prerequisites: None
Corequisites: None
This course presents quality assurance topics relating to an effective quality system. Emphasis is placed on quality management concepts, including sampling and reliability. Also covered in this course will be the cost of quality. Upon completion, students should have the basic knowledge required to take the ASQC Certified Quality Technician exam.

Internet Technologies

ITN 160 Principles of Web Design **2 2 3**
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course introduces intermediate to advanced web page design techniques. Topics include effective use of graphics, fonts, colors, navigation tools, advanced markup language elements, as well as a study of bed design techniques. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web pages.

ITN 170 Introduction to Internet Database **2 2 3**
Prerequisites: CIS 155
Corequisites: None
This is the first of two courses introducing the uses of databases to store, retrieve and query data through HTML forms. Topics include database design for Internet databases, use of ODBC-compliant databases. Upon completion, students should be able to create and maintain a database that will collect, query, and report on data via an HTML form.

Machining

MAC 111 Machining Technology I **2 12 6**
Prerequisites: None
Corequisites: None
This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling.

MAC 112 Machining Technology II **2 12 6**
Prerequisites: MAC 111
Corequisites: None
This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling.

MAC 113 Machining Technology III **2 12 6**
Prerequisites: MAC 112
Corequisites: None
This course provides an introduction to advanced and special machining operations. Emphasis is placed on working to specified tolerances with special and advanced setups. Upon completion, students should be able to produce a part to specifications.

MAC 114 Introduction to Metrology **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the care and use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion, students should be able to demonstrate the correct use of measuring instruments.

MAC 121 Introduction to CNC **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Students will learn computer skills necessary for machinists. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.

MAC 122 CNC Turning **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces the programming, setup, and operation of CNC turning centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC turning centers.

MAC 124 CNC Milling **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces the manual programming, setup, and operation of CNC machining centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC machining centers.

MAC 151 Machining Calculations **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.

MAC 152 Advanced Machining Calculations **1 2 2**
Prerequisites: None
Corequisites: None
This course combines mathematical functions with practical machine shop applications and problems. Emphasis is placed on gear ratios, lead screws, indexing problems, and their applications in the machine shop. Upon completion, students should be able to calculate solutions to machining problems.

MAC 153 Compound Angles **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces the application of basic types and uses of compound angles. Emphasis is placed on problem solving by tilting and rotating adjacent angles to resolve an unknown compound angle. Upon completion, students should be able to set up and develop compound angles on parts using problem-solving techniques. This course is a unique concentration requirement of the Tool, Die, and Mold Making concentration in the Machining Technology program.

MAC 214 Machining Technology IV **2 12 6**
Prerequisites: MAC 112
Corequisites: None
This course provides advanced applications and practical experience in the manufacturing of complex parts. Emphasis is placed on inspection, gauging, and the utilization of machine tools. Upon completion, students should be able to manufacture complex assemblies to specifications

MAC 224 Advanced CNC Milling **1 3 2**
Prerequisites: MAC 124
Corequisites: None
This course covers advanced methods in setup and operation of CNC machining centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC machining centers.

MAC 226 CNC EDM Machining **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces the programming, setup, and operation of CNC electrical discharge machines. Topics include programming formats, control functions, program editing, production of parts, and inspection. Upon completion, students should be able to manufacture simple parts using CNC electrical discharge machines.

MAC 229 CNC Programming **2 0 2**
Prerequisites: MAC 121, MAC 122, MAC 124, or MAC 226
Corequisites: None
This course provides concentrated study in advanced programming techniques for working with modern CNC machine tools. Topics include custom macros and subroutines, canned cycles, and automatic machining cycles currently employed by the machine tool industry. Upon completion, students should be able to program advanced CNC functions while conserving machine memory.

MAC 241 Jigs and Fixtures I **2 6 4**
Prerequisites: MAC 112
Corequisites: None
This course introduces the application and use of jigs and fixtures. Emphasis is placed on design and manufacture of simple jigs and fixtures. Upon completion, students should be able to design and build simple jigs and fixtures.

MAC 243 Die Making I **2 6 4**
Prerequisites: MAC 112
Corequisites: None
This course introduces the principles and applications of die making. Topics include types, construction, and application of dies. Upon completion, students should be able to design and build simple dies.

MAC 244 Die Making II **1 9 4**
Prerequisites: MAC 243
Corequisites: None
This course provides continued study in the application and use of dies. Emphasis is placed on the design and manufacturing of complex dies. Upon completion, students should be able to design and build complex dies. This course is a unique concentration requirement of the Tool, Die, and Mold Making concentration in the Machining Technology program.

MAC 245 Mold Construction I **2 6 4**
Prerequisites: MAC 112
Corequisites: None
This course introduces the principles of mold making. Topics include types, construction, and application of molds. Upon completion, students should be able to design and build simple molds.

MAC 246 Mold Construction II **1 9 4**
Prerequisites: MAC 245
Corequisites: None
This course provides continued study in the application and use of molds. Emphasis is placed on design and manufacturing of complex molds. Upon completion, students should be able to design and build complex molds. This course is a unique concentration requirement of the Tool, Die, and Mold Making concentration in the Machining Technology program.

MAC 247 Production Tooling **2 0 2**
Prerequisites: MAC 111
Corequisites: None
This course provides advanced study in tooling currently utilized in the production of metal parts. Emphasis is placed on the proper use of tooling used on CNC and other production machine tools. Upon completion, students should be able to choose proper tool grades based on manufacturing requirements and troubleshoot carbide tooling problems.

Mathematics

MAT 060 Essential Mathematics **3 2 4**
Prerequisites: MAT 050 or placement
Corequisites: RED 080 or placement
This course is a comprehensive study of mathematical skills which should provide a strong mathematical foundation to pursue further study. Topics include principles and applications of decimals, fractions, percents, ratio and proportion, order of operations, geometry, measurement, and elements of algebra and statistics. Upon completion, students should be able to perform basic computations and solve relevant, multi-step mathematical problems using technology where appropriate. The operation of a scientific calculator is an essential part of the instructional methodology, and all students are expected to have one.

MAT 070 Introductory Algebra **3 2 4**
Prerequisites: MAT 060 or placement
Corequisites: RED 080 or placement
This course establishes a foundation in algebraic concepts and problem solving. Topics include signed numbers, exponents, order of operations, simplifying expressions, solving linear equations and inequalities, graphing, formulas, polynomials, factoring, and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

MAT 080 Intermediate Algebra **3 2 4**
Prerequisites: MAT 070 or placement
Corequisites: RED 080 or placement
This course continues the study of algebraic concepts with emphasis on applications. Topics include factoring; rational expressions; rational exponents; rational, radical, and quadratic equations; systems of equations; inequalities; graphing; functions; variations; complex numbers; and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

MAT 095 Algebraic Concepts **3 0 3**
Prerequisites: MAT 080 or placement
Corequisites: RED 080 or placement
This course covers algebraic concepts with an emphasis on applications. Topics include linear, quadratic, absolute value, rational and radical equations, sets, real and complex numbers, exponents, graphing, formulas, polynomials, systems of equations, inequalities, and functions. Upon completion, students should be able to apply the above topics in problem solving using appropriate technology. The operation of a graphing calculator is an essential part of the instructional methodology, and all students are expected to have one.

MAT 101 Applied Mathematics I **2 2 3**
Prerequisites: MAT 060
Corequisites: None
This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study. *This course is intended for certificate and diploma programs.*

MAT 115 Mathematical Models **2 2 3**
Prerequisites: MAT 070
Corequisites: None
This course develops the ability to utilize mathematical skills and technology to solve problems at a level found in non-mathematics-intensive programs. Topics include applications to percent, ratio and proportion, formulas, statistics, functional notation, linear functions and their groups, probability, sampling techniques, scatter plots, and modeling. Upon completion, students should be able to solve practical problems, reason and communicate with mathematics, and work confidently, collaboratively, and independently.

MAT 121 Algebra/Trigonometry I **2 2 3**
Prerequisites: MAT 080 or MAT 090
Corequisites: None
This course provides an integrated approach to technology and the skills required to manipulate, display, and interpret mathematical functions and formulas used in problem solving. Topics include simplification, evaluation, and solving of algebraic, radical, exponential, and logarithmic functions; descriptive statistics; right triangle trigonometry; and the use of technology. Upon completion, students should be able to demonstrate an understanding of the use of mathematics and technology to solve problems and analyze and communicate results.

MAT 122 Algebra/Trigonometry II **2 2 3**
Prerequisites: MAT 121
Corequisites: None
This course extends the concepts covered in MAT 121 to include additional topics in algebra, function analysis, trigonometry, and systems of equations. Topics include translation and scaling of functions, Sine Law, Cosine Law, complex numbers, vectors, statistics, and systems of equations. Upon completion, students should be able to demonstrate an understanding of the use of technology to solve problems and to analyze and communicate results.

MAT 140 Survey of Mathematics **3 0 3**
Prerequisites: MAT 080 or MAT 090
Corequisites: None
This course provides an introduction in a nontechnical setting to selected topics in mathematics. Topics may include, but are not limited to, sets, logic, probability, statistics, matrices, mathematical systems, geometry, topology, mathematics of finance, and modeling. Upon completion, students should be able to understand a variety of mathematical applications, think logically, and be able to work collaboratively and independently. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/ mathematics.*

MAT 140A Survey of Mathematics Lab **0 2 1**
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 140
This course is a laboratory for MAT 140. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

MAT 151 Statistics I **3 0 3**
Prerequisites: MAT 080 or MAT 090
Corequisites: None
This course provides a project-based approach to the study of basic probability, descriptive and inferential statistics, and decision making. Emphasis is placed on measures of central tendency and dispersion, correlation, regression, discrete and continuous probability distributions, quality control, population parameter estimation, and hypothesis testing. Upon completion, students should be able to describe important characteristics of a set of data and draw inferences about a population from sample data. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 151A Statistics I Lab **0 2 1**
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 151
This course is a laboratory for MAT 151. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 161 College Algebra **3 0 3**
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 161A
This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on applications involving equations and inequalities; polynomials, rational, exponential and logarithmic functions; and graphing and data analysis/modeling. Upon completion, students should be able to choose an appropriate model to fit a data set and use the model for analysis and prediction. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics for the A.A. degree.*

MAT 161A College Algebra Lab **0 2 1**
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 161
This course is a laboratory for MAT 161. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

MAT 171 Precalculus Algebra **3 0 3**
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 171A
This is the first of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on equations and inequalities, functions (linear, polynomial, rational), systems of equations and inequalities, and parametric equations. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and predictions. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 171A Precalculus Algebra Lab **0 2 1**
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 171
This course is a laboratory for MAT 171. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

MAT 172 Precalculus Trigonometry **3 0 3**
Prerequisites: MAT 171
Corequisites: None
This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 172A Precalculus Trigonometry Lab **0 2 1**
Prerequisites: MAT 171
Corequisites: MAT 172
This course is a laboratory for MAT 172. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

MAT 175 Precalculus **4 0 4**
Prerequisites: High school Algebra III/Trigonometry or MAT 162
Corequisites: None
This course provides an intense study of the topics which are fundamental to the study of calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic trigonometry. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 175A Precalculus Lab **0 2 1**
Prerequisites: High school Algebra III/Trigonometry or MAT 162
Corequisites: MAT 175
This course is a laboratory for MAT 175. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

MAT 191 Selected Topics, Graphic Calculators **1 2 2**
Prerequisites: None
Corequisites: None
This course explores the structure of the TI-86 Graphing Calculator. Topics include the operation of the utility and the specific functional areas such as the catalog; the math, calculus, and test operations; constants, conversions, bases, and complex numbers; graphing; tables; matrices; statistics; equation solving; amd programming. Upon completion, students should be able to solve problems in these areas using the graphing calculator.

MAT 263 Brief Calculus **3 0 3**
Prerequisites: MAT 161
Corequisites: None
This course introduces concepts of differentiation and integration and their applications to solving problems; the course is designed for students needing one semester of calculus. Topics include functions, graphing, differentiation, and integration with emphasis on applications drawn from business, economics, and biological and behavioral sciences. Upon completion, students should be able to demonstrate an understanding of the use of basic calculus and technology to solve problems and to analyze and communicate results. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 271 Calculus I **3 2 4**
Prerequisites: MAT 172 or MAT 175
Corequisites: None
This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications. Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 272 Calculus II **3 2 4**
Prerequisites: MAT 271
Corequisites: None
This course provides a rigorous treatment of integration and is the second calculus course in a three-course sequence. Topics include applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to use integration and approximation techniques to solve application problems. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 273 Calculus III **3 2 4**
Prerequisites: MAT 272
Corequisites: None
This course covers the calculus of several variables and is third calculus course in a three-course sequence. Topics include functions of several variables, partial derivatives, multiple integrals, solid analytical geometry, vector-valued functions, and line and surface integrals. Upon completion, students should be able to solve problems involving vectors and functions of several variables. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

MAT 285 Differential Equations **3 0 3**
Prerequisites: MAT 272
Corequisites: None
This course provides an introduction to ordinary differential equations with an emphasis on applications. Topics include first order, linear higher-order, and systems of differential equations; numerical methods; series solutions; eigenvalues and eigenvectors; Laplace transforms; and Fourier series. Upon completion, students should be able to use differential equations to model physical phenomena, solve the equations, and use the solutions to analyze the phenomena. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Mechanical

MEC 110 Introduction to CAD/CAM **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces CAD/CAM. Emphasis is placed on transferring part geometry from CAD to CAM for the development of a CNC-ready program. Upon completion, students should be able to use CAD/CAM software to produce a CNC program.

MEC 141 Introduction to Manufacturing Processes **2 2 3**
Prerequisites: None
Corequisites: None
This course covers the properties and characteristics of manufacturing materials and the processes used to form them. Emphasis is placed on manufacturing materials, heat-treating processes, and manufacturing processes. Upon completion, students should be able to identify physical characteristics of materials and describe processes used to manufacture a part.

***MEC 161 Manufacturing Processes I** **3 0 3**
Prerequisites: None
Corequisites: MEC 161A
This course provides the fundamental principles of processing materials into usable forms for the customer. Emphasis is placed on material forming, removal, and value-added processing provided to the customer by the manufacturers. Upon completion, students should be able to apply principles of traditional and nontraditional processing for metals and nonmetals.

***MEC 161A Manufacturing Processes I Lab** **0 3 1**
Prerequisites: None
Corequisites: MEC 161
This course is a laboratory for MEC 161. Emphasis is placed on experiences that enhance the materials presented in MEC 161. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in MEC 161.

***MEC 180 Engineering Materials** **2 3 3**
Prerequisites: None
Corequisites: None
This course covers the physical and mechanical properties of materials. Topics include testing, heat treating, ferrous and non-ferrous metals, plastics, composites, and material selection. Upon completion, students should be able to specify basic tests and properties and select appropriate materials on the basis of specific properties.

MEC 231 Computer-Aided Manufacturing I **1 4 3**
Prerequisites: None
Corequisites: None
This course introduces computer-aided manufacturing (CAM) applications and concepts. Emphasis is placed on developing/defining part geometry and the processing information needed to manufacture parts. Upon completion, students should be able to demonstrate skills in defining part geometry, program development, and code generation using CAM software.

MEC 232 Computer-Aided Manufacturing II **1 4 3**
Prerequisites: MEC 231
Corequisites: None
This course provides an in-depth study of CAM applications and concepts. Emphasis is placed on the manufacturing of complex parts using computer-aided manufacturing software. Upon completion, students should be able to manufacture complex parts using CAM software.

***MEC 236 Regional Manufacturing** **1 4 3**
Prerequisites: None
Corequisites: None
This course introduces the regional manufacturing facilities. Emphasis is placed on on-site tours and interaction with local regional manufacturing personnel. Upon completion, students should be able to identify regional manufacturers, their products, basic methods, personnel, and hiring standards.

***MEC 237 Control Systems** **3 2 4**
Prerequisites: MAT 162 and PHY 131 or ELC 111 and ELC 131
Corequisites: None
This course covers basic principles of control systems. Topics include the basic principles of electrical, electronic, and pneumatic control systems as related to industrial applications. Upon completion, students should be able to understand the design and function of circuits, motors, transducers, servomechanisms, and other devices.

MEC 250 Statics and Strength of Materials **4 3 5**
Prerequisites: PHY 131 or PHY 151
Corequisites: None
This course covers the concepts and principles of statics and stress analysis. Topics include systems of forces on structures in equilibrium and analysis of stresses and strains on these components. Upon completion, students should be able to analyze forces and the results of stresses and strains on structural components.

MEC 267 Thermal Systems **2 2 3**
Prerequisites: PHY 131 or PHY 151
Corequisites: None
This course introduces the fundamental laws of thermodynamics. Topics include work and energy, open and closed systems, and heat engines. Upon completion, students should be able to demonstrate a knowledge of the laws and principles that apply to thermal power.

***MEC 270 Machine Design** **3 3 4**
Prerequisites: DFT 151, MEC 180, and MEC 250 or MEC 251 and MEC 252
Corequisites: None
This course covers the basic principles underlying design and selection of machine elements. Topics include stress analysis, selection of components, power transmission, and other design considerations. Upon completion, students should be able to identify and solve mechanical design problems by applying basic engineering principles.

MEC 272 Dynamics **2 2 3**
Prerequisites: PHY 131 or PHY 151
Corequisites: None
This course covers the forces associated with motion. Topics include translation, rotation, acceleration, displacement, and velocity. Upon completion, students should be able to analyze forces and motion in a dynamic mechanical system.

***MEC 288 Manufacturing Engineering Research & Design Project** **0 2 1**
Prerequisites: None
Corequisites: ATR 112
This course provides an opportunity to research specific interest areas in the field of manufacturing engineering. Emphasis is on a specific area of concern. Upon completion, students should be able to demonstrate competence through a hands-on project.

***MEC 293 Selected Topics in Mechanical Engineering Technology 1 6 3**
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

Medical Transcription

MED 121 Medical Terminology I 3 0 0 3
Prerequisites: ENG 090, ENG 090A and RED 090 or placement test
Corequisites: None
This course introduces prefixes, suffixes, and word roots used in the language of medicine. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

MED 122 Medical Terminology II 3 0 0 3
Prerequisites: MED 121
Corequisites: None
This course is the second in a series of medical terminology courses. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

Marketing and Retailing

MKT 120 Principles of Marketing 3 0 3
Prerequisites: None
Corequisites: None
This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision making.

MKT 121 Retailing 3 0 3
Prerequisites: None
Corequisites: None
This course examines the role of retailing in the economy. Topics include the development of present retail structure, functions performed, effective operations, and managerial problems resulting from current economic and social trends. Upon completion, students should be able to demonstrate an understanding of the basic principles of retailing.

MKT 122 Visual Merchandising 3 0 3
Prerequisites: None
Corequisites: None
This course introduces basic layout design and commercial display in retail and service organizations. Topics include an analysis of display as a visual merchandising medium and an examination of the principles and applications of display and design. Upon completion, students should be able to plan, build, and evaluate designs and displays. *This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.*

MKT 123 Fundamentals of Selling **3 0 3**
Prerequisites: None
Corequisites: None
This course is designed to emphasize the necessity of selling skills in a modern business environment. Emphasis is placed on sales techniques involved in various types of selling situations. Upon completion, students should be able to demonstrate an understanding of the techniques covered.

MKT 220 Advertising and Sales Promotion **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the elements of advertising and sales promotion in the business environment. Topics include advertising and sales promotion appeals, selection of media, use of advertising and sales promotion as a marketing tool, and means of testing effectiveness. Upon completion, students should be able to demonstrate an understanding of the concepts covered through application.

MKT 221 Consumer Behavior **3 0 3**
Prerequisites: None
Corequisites: None
This course is designed to describe consumer behavior as applied to the exchange processes involved in acquiring, consuming, and disposing of goods and services. Topics include an analysis of basic and environmental determinants of consumer behavior with emphasis on the decision-making process. Upon completion, students should be able to analyze concepts related to the study of the individual consumer.

MKT 223 Customer Service **3 0 3**
Prerequisites: None
Corequisites: None
This course stresses the importance of customer relations in the business world. Emphasis is placed on learning how to respond to complex customer requirements and to efficiently handle stressful situations. Upon completion, students should be able to demonstrate the ability to handle customer relations.

MKT 224 International Marketing **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the basic concepts of international marketing activity and theory. Topics include product promotion, placement, and pricing strategies in the international marketing environment. Upon completion, students should be able to demonstrate a basic understanding of the concepts covered.

MKT 225 Marketing Research **3 0 3**
Prerequisites: MKT 120
Corequisites: None
This course provides information for decision making by providing guidance in developing, analyzing, and using data. Emphasis is placed on marketing research as a tool in decision making. Upon completion, students should be able to design and conduct a marketing research project and interpret the results. *This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.*

MKT 227 Marketing Applications **3 0 3**
Prerequisites: MKT 120 and MKT 221
Corequisites: None
This course extends the study of diverse marketing strategies. Emphasis is placed on case studies and small group projects involving research or planning. Upon completion, students should be able to effectively participate in the formulation of a marketing strategy. *This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program.*

Medical Laboratory Technology

MLT 110 Introduction to MLT **2 3 0 3**
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
This course is designed to introduce all aspects of the medical laboratory profession. Topics include health care/laboratory organization, professional ethics, basic laboratory techniques, safety, quality assurance, and specimen collection. Upon completion, students should be able to demonstrate a basic understanding of laboratory operations and be able to perform basic laboratory skills.

MLT 111 Urinalysis and Body Fluids **1 3 0 2**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163
Corequisites: None
This course introduces the laboratory analysis of urine and body fluids. Topics include physical, chemical, and microscopic examination of the urine and body fluids. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting urinalysis and body fluid tests.

MLT 120 Hematology/Hemostasis **3 3 0 4**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163
Corequisites: None
This course introduces the theory and technology used in analyzing blood cells and the study of hemostasis. Topics include hematology, hemostasis, and related laboratory testing. Upon completion, students should be able to demonstrate theoretical comprehension of hematology/hemostasis, perform diagnostic techniques, and correlate laboratory findings with disorders.

MLT 126 Immunology and Serology **1 2 0 2**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT 110 and BIO 163
Corequisites: None
This course introduces the immune system and response and basic concepts of antigens, antibodies, and their reactions. Emphasis is placed on basic principles of immunologic and serodiagnostic techniques and concepts of cellular and humoral immunity in health and disease. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing and interpreting routine immunologic and serodiagnostic procedures.

MLT 127 Transfusion Medicine **2 3 0 3**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 126
Corequisites: None
This course introduces the blood group systems and their applications in transfusion medicine. Emphasis is placed on blood bank techniques including blood grouping and typing, pre-transfusion testing, donor selection and processing, and blood component preparation and therapy. Upon completion, students should be able to demonstrate theoretical comprehension and application in performing/interpreting routine blood bank procedures and recognizing/resolving common problems.

MLT 130 Clinical Chemistry **3 3 0 4**
Prerequisites: Enrollment in the Medical Laboratory Technology program, CHM 130, and CHM 130A
Corequisites: None
This course introduces the quantitative analysis of blood and body fluids and their variations in health and disease. Topics include clinical biochemistry, methodologies, instrumentation, and quality control. Upon completion, students should be able to demonstrate theoretical comprehension of clinical chemistry, perform diagnostic techniques, and correlate laboratory findings with disorders.

MLT 140 Introduction to Microbiology **2 3 0 3**
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
This course is designed to introduce basic techniques and safety procedures in clinical microbiology. Emphasis is placed on the morphology and identification of common pathogenic organisms, aseptic technique, staining techniques, and usage of common media. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting basic clinical microbiology procedures.

MLT 210 CLA-MLT Transition **4 0 0 4**
Prerequisites: Completion of a one-year CAHEA approved medical laboratory assistant program
Corequisites: None
This course provides an overview of the changes that have occurred in medical laboratory technology. Topics include new test methodologies, current clinical practices, and relevant governmental regulations. Upon completion, students should be able to demonstrate theoretical comprehension of current issues and technical topics in the medical laboratory setting.

MLT 215 Professional Issues **1 0 0 1**
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
This course surveys professional issues in preparation for career entry. Emphasis is placed on work readiness and theoretical concepts in microbiology, immunohematology, hematology, and clinical chemistry. Upon completion, students should be able to demonstrate competence in career entry-level areas and be prepared for the national certification examination.

MLT 240 Special Clinic Microbiology **2 3 0 3**
Prerequisites: MLT 140
Corequisites: None
This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.

MLT 252 MLT Practicum I* **0 0 6 2**
Prerequisites: Enrollment in the Medical Laboratory Technology program, MLT120, MLT 240, MLT 126, MLT 130, BIO 163, CHM 130, and CHM 130A
Corequisites: MLT 111 and MLT 127
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of Phlebotomy.

MLT 254 MLT Practicum I* **0 0 12 4**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of blood banking.

MLT 255 MLT Practicum I* **0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of microbiology.

MLT 261 MLT Practicum II* **0 0 3 1**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of donors and component therapy.

MLT 265 MLT Practicum II* **0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of hematology.

MLT 275 MLT Practicum III* **0 0 15 5**
Prerequisites: Enrollment in the Medical Laboratory Technology program and MLT 252
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations. Concentration will be in the area of clinical chemistry.

** MLT 252, 254, 255, 261, 265, 275
Because of clinical space restrictions, students will have individual schedules for MLT Practicums. Students will register for these courses as assigned by the department chairperson. During each student's first clinical experience course, general hospital orientation will be covered.

Music

MUS 110 Music Appreciation **3 0 3**
Prerequisites: None
Corequisites: None
This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

MUS 113 American Music **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces various musical styles, influences, and composers of the United States from pre-Colonial times to the present. Emphasis is placed on the broad variety of music particular to American culture. Upon completion, students should be able to demonstrate skills in basic listening and understanding of American music. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

MUS 114 Non-Western Music **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a basic survey of the music of the non-Western world. Emphasis is placed on nontraditional instruments, sources, and performing practices. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of non-Western music. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

MUS 121 Music Theory I **3 2 4**
Prerequisites: None
Corequisites: None
This course provides an in-depth introduction to melody, rhythm, and harmony. Emphasis is placed on fundamental melodic, rhythmic, and harmonic analysis, introduction to part writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

MUS 122 Music Theory II **3 2 4**
Prerequisites: MUS 121
Corequisites: None
This course is a continuation of studies begun in MUS 121. Emphasis is placed on advanced melodic, rhythmic, and harmonic analysis and continued studies in part-writing, ear-training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Networking Technology

NET 110 Data Communication/Networking **2 2 3**
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course introduces data communication and networking. Topics include telecommunication standards, protocols, equipment, network topologies, communication software, LANs, WANs, the Internet, and network operating systems. Upon completion, students should be able to demonstrate understanding of the fundamentals of telecommunication and networking.

NET 120 Network Installation/Administration I **2 2 3**
Prerequisites: NET 110
Corequisites: None
This course covers the installation and administration of network hardware and system software. Topics include network topologies, various network operating systems, server and workstation installation and configuration, printer services, and connectivity options. Upon completion, students should be able to perform basic installation and administration of departmental networks.

NET 125 Routing and Switching I **1 4 3**
Prerequisites: NET 110
Corequisites: None
This course introduces the OSI model, network topologies, IP addressing, and subnet masks, simple routing techniques, and basic switching terminology. Topics include the basic functions of the seven layers of the OSI model, different classes of IP addressing and subnetting, router login scripts. Upon completion, students should be able to list the key internetworking functions of the OSI Networking Layer and how they are performed in a variety of router types.

NET 126 Routing and Switching II **1 4 3**
Prerequisites: NET 125
Corequisites: None
This course introduces router configurations, router protocols, switching methods, and hub terminology. Topics include the basic flow control methods, router startup commands, manipulation of router configuration files, IP and data link addressing. Upon completion, students should be able to prepare the initial router configuration files, as well as enable, verify, and configure IP addresses.

NET 145 Introduction to Linux **2 2 3**
Prerequisites: NET 110
Corequisites: None
This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

NET 155 Linux System Administration **2 2 3**
Prerequisites: NET 145 or department approval
Corequisites: None
This course introduces the Linux file system, group administration, and control of system hardware. Topics include installation of Linux on standard and non-standard hardware, create and maintain the Linux file system, configure a NIS client and DHCP client, configure NFS and SMB/Samba, Configure X, Gnome, and KDE, perform basic memory and process management, and configure basic host security. Upon completion, students should be able to perform system administration tasks to a level where they can install, configure, and attach a new Linux workstation to an existing network.

NET 193 Selected Topics in Networking Technology **2 2 3**
Prerequisites: NET 120 and second year status
Corequisites: None
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Workplace issues of computer network professionals will be examined. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

NET 220 Network Installation/Administration II **2 2 3**
Prerequisites: NET 120
Corequisites: None
This course covers advanced network installation and administration concepts and procedures. Topics include basic network troubleshooting techniques, advanced print services, traffic management, security, backup, multiple protocol support, server configuration options, fault tolerance, and inter-network options. Upon completion, students should be able to demonstrate understanding of advanced management of departmental networks.

NET 225 Advanced Router and Switching I **1 4 3**
Prerequisites: NET 126
Corequisites: None
This course introduces advanced router configuration, advanced LAN switching theory and design, VLANs, Novell IPX, and threaded case studies. Topics include router elements and operations, adding routing protocols to a configuration, monitoring IPX operations on the router, LAN segmentation, and advanced switching methods. Upon completion students should be able to describe LAN and network segmentation with bridges, routers and switches and describe a virtual LAN.

NET 226 Advanced Router and Switching II **1 4 3**
Prerequisites: NET 225
Corequisites: None
This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, channels, and function groups, describe the Spanning Tree protocol.

NET 230 Wide Area Networking **2 2 3**
Prerequisites: NET 120
Corequisites: None
This course is designed to introduce significant aspects of network interconnectivity. Topics include LAN-to-LAN, LAN-to-host, LAN-to-WAN connectivity, Internet connections, and voice-video-data transmission. Upon completion, students should be able to demonstrate an understanding of wide area networking.

NET 240 Network Design **3 0 3**
Prerequisites: NET 120
Corequisites: None
This course covers the principles of the design of LANs and WANs. Topics include network architecture, transmission systems, traffic management, bandwidth requirements, Internet working devices, redundancy, and broad-band versus base-band systems. Upon completion, students should be able to design a network to meet specified business and technical requirements.

NET 250 Advanced Networks I **2 2 3**
Prerequisites: NET 120
Corequisites: None
This course covers advanced network management, security, and server issues. Topics include server types (file, database, fax, communication, FTP, e-mail, CD-ROM), encryption, authentication, remote monitoring, viruses, and disaster recovery. Upon completion, students should be able to perform advanced monitoring and management of various types of servers and networks.

NET 251 Advanced Networks II **2 2 3**
Prerequisites: NET 250
Corequisites: None
This course is a continuation of NET 250. Topics include further discussion of network management, monitoring and security, as well as additional work with various types of servers. Upon completion, students should be able to detect and resolve problems relating to network security, performance, and recovery on various types of servers.

NET 260 Internet Development and Support **3 0 3**
Prerequisites: NET 110
Corequisites: None
This course covers issues relating to the development and implementation of Internet related tools and services. Topics include Internet organization, site registration, e-mail servers, Web servers, Web page development, legal issues, firewalls, multimedia, TCP/IP, service providers, FTP, list servers, and gateways. Upon completion, students should be able to develop and support the Internet services needed within an organization.

NET 280 Networking Project **1 4 3**
Prerequisites: NET 240
Corequisites: None
This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.

Nursing

***NUR 101 Practical Nursing I** **7 6 6 11**
Prerequisites: Admission into the Practical Nursing program
Corequisites: BIO 163 and PSY 110
This course introduces concepts as related to the practical nurse's care-giver and discipline-specific roles. Emphasis is placed on the nursing process, legal/ethical/professional issues, wellness/illness patterns, and basic nursing skills. Upon completion, students should be able to demonstrate beginning understanding of nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. *This is a diploma-level course.*

***NUR 102 Practical Nursing II** **8 0 12 12**
Prerequisites: BIO 163, NUR 101, and PSY 110
Corequisites: None
This course includes more advanced concepts as related to the practical nurse's care-giver and discipline-specific roles. Emphasis is placed on the nursing process, delegation, cost effectiveness, legal/ethical/professional issues, and wellness/illness patterns. Upon completion, students should be able to begin participating in the nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. *This is a diploma-level course.*

***NUR 103 Practical Nursing III** **6 0 12 10**
Prerequisites: CIS 110, ENG 102, NUR 102
Corequisites: None
This course focuses on use of nursing/related concepts by practical nurses as providers of care/members of discipline in collaboration with health team members. Emphasis is placed on the nursing process, wellness/illness patterns, entry level issues, accountability, advocacy, professional development, evolving technology, and changing health care delivery systems. Upon completion, students should be able to use the nursing process to promote/maintain/restore optimum health for diverse clients throughout the life span. *This is a diploma-level course.*

***NUR 115 Fundamentals of Nursing** **2 3 6 5**
Prerequisites: Admission into the Associate Degree Nursing program
Corequisites: None
This course introduces concepts basic to beginning nursing practice. Emphasis is placed on the application of the nursing process to provide and manage care as a member of the discipline of nursing. Upon completion, students should be able to demonstrate beginning competence in caring for individuals with common alterations of health.

***NUR 116 Nursing of Older Adults** **2 3 3 4**
Prerequisites: NUR 125 and NUR 255
Corequisites: None
This course provides an opportunity to utilize the provider of care and manager of care roles to meet nursing needs of older adults in a variety of settings. Emphasis is placed on the aging process as it applies to normal developmental changes and alterations in health commonly occurring in the older adult. Upon completion, students should be able to apply the nursing process in caring for the older adult.

***NUR 117 Pharmacology** **1 3 0 2**
Prerequisites: Admission into the Associate Degree Nursing program
Corequisites: None
This course introduces information concerning sources, effects, legalities, and the safe use of medications as therapeutic agents. Emphasis is placed on nursing responsibility, accountability, and application of the nursing process regarding drug therapy. Upon completion, students should be able to compute dosages and administer medication safely.

***NUR 125 Maternal-Child Nursing** **5 3 6 8**
Prerequisites: NUR 115, NUR 188 and SOC 215
Corequisites: None
This course introduces nursing concepts related to the delivery of nursing care for the expanding family. Emphasis is placed on utilizing the nursing process as a framework for managing/providing nursing care to individuals and families along the wellness-illness continuum. Upon completion, students should be able to utilize the nursing process to deliver nursing care to mothers, infants, children, and families.

***NUR 133 Nursing Assessment** **2 3 0 3**
Prerequisites: Admission into the Associate Degree Nursing program, or Licensed Healthcare Provider with Department Chair approval
Corequisites: None
This course provides theory and application experience for performing nursing assessment of individuals across the life span. Emphasis is placed on interviewing and physical assessment techniques and documentation of findings appropriate for nursing. Upon completion, students should be able to complete a health history and perform a non-invasive physical assessment.

***NUR 135 Adult Nursing I** **5 3 9 9**
Prerequisites: BIO 168, ENG 111, NUR 115 and NUR 133
Corequisites: NUR 117
This course introduces concepts related to the nursing care of individuals experiencing acute and chronic alterations in health. Emphasis is placed on utilizing the nursing process as a framework for providing and managing nursing care to individuals along the wellness-illness continuum. Upon completion, students should be able to apply the nursing process to individuals experiencing acute and chronic alterations in health.

***NUR 185 Mental Health Nursing** **3 0 6 5**
Prerequisites: BIO 169, CIS 110, NUR 115, NUR 117 and NUR 135
Corequisites: None
This course includes concepts related to the nursing care of individuals experiencing alterations in social and psychological functioning. Emphasis is placed on utilizing the nursing process to provide and manage nursing care for individuals with common psychiatric disorders or mental health needs. Upon completion, students should be able to apply psychosocial theories in the nursing care of individuals with psychiatric/mental health needs.

***NUR 188 Nursing in the Community** **1 0 6 3**
Prerequisites: BIO 169, CIS 110, NUR 115, NUR 117 and NUR 135
Corequisites: None
This course is designed to introduce basic concepts and practices of community-based nursing. Emphasis is placed on roles and functions of nurses as members of interdisciplinary teams in the community and utilization of the nursing process to meet the needs or problems of individuals and groups in the community. Upon completion, students should be able to provide nursing care to individuals and/or groups in community-based settings.

***NUR 189 Nursing Transition** **1 3 0 2**
Prerequisites: Admission into the LPN/ADN Bridge program, or Licensed Healthcare Provider with Department Chair approval
Corequisites: NUR 133
This course is designed to assist the licensed practical nurse in transition to the role of the associate degree nurse. Topics include the role of the registered nurse, nursing process, homeostasis, and validation of selected nursing skills and physical assessment. Upon completion, students should be able to articulate into the ADN program at the level of the generic student.

***NUR 235 Adult Nursing II** **4 3 15 10**
Prerequisites: COM 231, ENG 113, NUR 125, NUR 135 and NUR 255
Corequisites: None
This course provides expanded concepts related to nursing care for individuals experiencing common complex alterations in health. Emphasis is placed on the nurse's role as a member of a multi-disciplinary team and as a manager of care for a group of individuals. Upon completion, students should be able to provide comprehensive nursing care for groups of individuals with common complex alterations in health.

***NUR 255 Professional Issues** **3 0 0 3**
Prerequisites: CIS 110, NUR 185, NUR 188, and SOC 215
Corequisites: ENG 114 and NUR 125
This course explores basic concepts of practice in the management of patient care in a complex health care system. Emphasis is placed on professional, legal, ethical, and political issues and management concepts. Upon completion, students should be able to articulate professional and management concepts.

Operations Management

OMT 112 Materials Management **3 0 3**
Prerequisites: ISC 221
Corequisites: None
This course covers the basic principles of materials management. Emphasis is placed on the planning, procurement, movement, and storage of materials. Upon completion, students should be able to demonstrate an understanding of the concepts and techniques related to materials management. *This course is a unique concentration requirement of the Operations Management concentration in the Business Administration program.*

OMT 132 ISO 9000 Standards **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the current version of the ISO 9000 series of standards. Topics include the ISO 9000 series of standards and proper implementation of these standards in an organization. Upon completion, students should be able to identify the proper ISO standard for registration and demonstrate a detailed understanding of each standard.

OMT 133 ISO 9000 Internal Auditor **3 0 3**
Prerequisites: OMT 132 or equivalent
Corequisites: None
This course covers the topics necessary in order to conduct an internal quality audit that complies with the proper ISO 9000 standard. Topics include audit planning, conducting internal audits, audit communication, and corrective action follow-up reports. Upon completion, students should be able to demonstrate a proficiency in auditing techniques for conducting internal quality audits.

***OMT 260 Issues in Operations Management** **3 0 3**
Prerequisites: ISC 121, ISC 131, ISC 210, ISC 225 and OMT 112
Corequisites: None
This course presents a variety of topics that highlight contemporary problems and issues related to operations management. Emphasis is placed on production and operations planning, environmental health and safety, materials management, and quality systems. Upon completion, students should be able to demonstrate the ability to make decisions and resolve problems in an operations management environment. *This course is a unique concentration requirement of the Operations Management concentration in the Business Administration program.*

Office Systems Technology

OST 080 Basic Keyboarding **1 2 2**
Prerequisites: None
Corequisites: None
This course is designed to develop elementary keyboarding skills. Emphasis is placed on mastery of the keyboard. Upon completion, students should be able to demonstrate basic proficiency in keyboarding.

OST 131 Keyboarding **1 2 2**
Prerequisites: None
Corequisites: None
This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system.

OST 132 Keyboard Skill Building **1 2 2**
Prerequisites: OST 134
Corequisites: None
This course provides accuracy and speed-building drills. Emphasis is placed on diagnostic tests to identify accuracy and speed deficiencies followed by corrective drills. Upon completion, students should be able to keyboard rhythmically with greater accuracy and speed.

OST 134 Text Entry and Formatting **2 2 3**
Prerequisites: OST 131 or tested keyboarding proficiency
Corequisites: None
This course is designed to provide the skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce mailable documents. Students will also be able to complete key timed writings at speeds commensurate with employability.

OST 136 Word Processing **1 2 2**
Prerequisites: OST 131
Corequisites: None
This course introduces word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment.

OST 148 Medical Coding, Billing, and Insurance **3 0 3**
Prerequisites: CIS 110 and MED 121
Corequisites: None
This course introduces CPT and ICD coding as they apply to medical insurance and billing. Emphasis is placed on accuracy in coding, forms preparation, and posting. Upon completion, students should be able to describe the steps of the total billing cycle and explain the importance of accuracy.

OST 149 Medical Legal Issues **3 0 3**
Prerequisites: MED 122
Corequisites: None
This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.

OST 164 Text Editing Applications **3 0 3**
Prerequisites: OST 131
Corequisites: None
This course provides a comprehensive study of editing skills needed in the workplace. Emphasis is placed on grammar, punctuation, sentence structure, proofreading, and editing. Upon completion, students should be able to use reference materials to compose and edit text.

OST 184 Records Management **1 2 2**
Prerequisites: None
Corequisites: None
This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system. ARMA indexing rules are used.

OST 201 Medical Transcription I **3 2 4**
Prerequisites: OST 136 and OST 164
Corequisites: MED 122 and OST 136
This course introduces dictating equipment and typical medical dictation. Emphasis is placed on efficient use of equipment, dictionaries, PDRs, and other reference materials. Upon completion, students should be able to efficiently operate dictating equipment and to accurately transcribe a variety of medical documents in a specified time.

OST 202 Medical Transcription II **3 2 4**
Prerequisites: OST 201
Corequisites: None
This course provides additional practice in transcribing documents from various medical specialties. Emphasis is placed on increasing transcription speed and accuracy and understanding medical procedures and terminology. Upon completion, students should be able to accurately transcribe a variety of medical documents in a specified time.

OST 247 CPT Coding in the Medical Office **1 2 2**
Prerequisites: MED 122, OST 148
Corequisites: None
This course provides in-depth coverage of procedural coding. Emphasis is placed on CPT and HCPCS rules for Medicare billing. Upon completion, students should be able to properly code procedures and services performed by physicians in ambulatory settings.

OST 248 Diagnostic Coding **1 2 2**
Prerequisites: MED 122, OST 148
Corequisites: None
This courses provides an in-depth study of diagnostic coding for the medical office. Emphasis is placed on ICD-9-CM codes used on superbills and other encounter forms. Upon completion, students should be able to apply the principles of diagnostic coding in the physician's office.

***OST 286 Professional Development** **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, healthy life-styles, appearance, attitude, personal and professional growth, multicultural awareness, and professional etiquette. Upon completion, students should be able to demonstrate these attributes in the classroom, office, and society.

Phlebotomy

***PBT 100 Phlebotomy Technology** **5 2 0 6**
Prerequisites: Enrollment in the Phlebotomy Technology program
Corequisites: PBT 101
This course provides instruction in the skills needed for the proper collection of blood and other specimens used for diagnostic testing. Emphasis is placed on ethics, legalities, medical terminology, safety and universal precautions, health care delivery systems, patient relations, anatomy and physiology, and specimen collection. Upon completion, students should be able to demonstrate competence in the theoretical comprehension of phlebotomy techniques. *This is a certificate-level course.*

***PBT 101 Phlebotomy Practicum** **0 0 9 3**
Prerequisites: Enrollment in the Phlebotomy Technology program
Corequisites: PBT 100
This course provides supervised experience in the performance of venipuncture and microcollection techniques in a clinical facility. Emphasis is placed on patient interaction and application of universal precautions, proper collection techniques, special procedures, specimen handling, and data management. Upon completion, students should be able to safely perform procedures necessary for specimen collections on patients in various health care settings. *This is a certificate-level course.*

Physical Education

PED 110 Fit and Well for Life **1 2 2**
Prerequisites: None
Corequisites: None
This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors. Emphasis is placed on wellness through the study of nutrition, weight control, stress management, and consumer facts on exercise and fitness. Upon completion, students should be able to plan a personal, lifelong fitness program based on individual needs, abilities, and interests. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 111 Physical Fitness I **0 3 1**
Prerequisites: None
Corequisites: None
This course provides an individualized approach to physical fitness utilizing the five major components. Emphasis is placed on the scientific basis for setting up and engaging in personalized physical fitness programs. Upon completion, students should be able to set up and implement an individualized physical fitness program. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 112 Physical Fitness II **0 3 1**
Prerequisites: PED 111 or department approval
Corequisites: None
This course is an intermediate-level fitness class. Topics include specific exercises contributing to fitness and the role exercise plays in developing body systems. Upon completion, students should be able to implement and evaluate an individualized physical fitness program. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 113 Aerobics I **0 3 1**
Prerequisites: None
Corequisites: None
This course introduces a program of cardiovascular fitness involving continuous, rhythmic exercise. Emphasis is placed on developing cardiovascular efficiency, strength, and flexibility and on safety precautions. Upon completion, students should be able to select and implement a rhythmic aerobic exercise program. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 114 Aerobics II **0 3 1**
Prerequisites: PED 113 or department approval
Corequisites: None
This course provides a continuation of a program of cardiovascular fitness involving rhythmic exercise. Emphasis is placed on a wide variety of aerobic activities which include cardiovascular efficiency, strength, and flexibility. Upon completion, students should be able to participate in and design a rhythmic aerobic exercise routine. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 115 Step Aerobics I **0 3 1**
Prerequisites: None
Corequisites: None
This course introduces the fundamentals of step aerobics. Emphasis is placed on basic stepping up and down on an adjustable platform; cardiovascular fitness; and upper body, floor, and abdominal exercises. Upon completion, students should be able to participate in basic step aerobics. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 116 Step Aerobics II **0 3 1**
Prerequisites: PED 115 or department approval
Corequisites: None
This course provides a continuation of step aerobics. Emphasis is placed on a wide variety of choreographed step patterns; cardiovascular fitness; and upper body, abdominal, and floor exercises. Upon completion, students should be able to participate in and design a step aerobics routine. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 117 Weight Training I **0 3 1**
Prerequisites: None
Corequisites: None
This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight training program. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 118 Weight Training II **0 3 1**
Prerequisites: PED 117 or Department Approval
Corequisites: None
This course covers advanced levels of weight training. Emphasis is placed on meeting individual training goals and addressing weight training needs and interests. Upon completion, students should be able to establish and implement an individualized advanced weight training program. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 120 Walking for Fitness **0 3 1**
Prerequisites: None
Corequisites: None
This course introduces fitness through walking. Emphasis is placed on stretching, conditioning exercises, proper clothing, fluid needs, and injury prevention. Upon completion, students should be able to participate in a recreational walking program. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 121 Walk, Jog, Run **0 3 1**
Prerequisites: None
Corequisites: None
This course covers the basic concepts involved in safely and effectively improving cardiovascular fitness. Emphasis is placed on walking, jogging, or running as a means of achieving fitness. Upon completion, students should be able to understand and appreciate the benefits derived from these activities. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 128 Golf — Beginning **0 2 1**
Prerequisites: None
Corequisites: None
This course emphasizes the fundamentals of golf. Topics include the proper grips, stance, alignment, swings for the short and long game, putting, and the rules and etiquette of golf. Upon completion, students should be able to perform the basic golf shots and demonstrate a knowledge of the rules and etiquette of golf. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 129 Golf — Intermediate **0 2 1**
Prerequisites: PED 128
Corequisites: None
This course covers the more advanced phases of golf. Emphasis is placed on refining the fundamental skills and learning more advanced phases of the games such as club selection, trouble shots, and course management. Upon completion, students should be able demonstrate the knowledge and ability to play a recreational round of golf. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 130 Tennis — Beginning **0 2 1**
Prerequisites: None
Corequisites: None
This course emphasizes the fundamentals of tennis. Topics include basic strokes, rules, etiquette, and court play. Upon completion, students should be able to play recreational tennis. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 131 Tennis — Intermediate **0 2 1**
Prerequisites: PED 130 or department approval
Corequisites: None
This course emphasizes the refinement of playing skills. Topics include continuing the development of fundamentals, learning advanced serves, strokes, pace and strategies in singles and doubles play. Upon completion, students should be able to play competitive tennis. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 139 Bowling — Beginning **0 2 1**
Prerequisites: None
Corequisites: None
This course introduces the fundamentals of bowling. Emphasis is placed on ball selection, grips, stance, and delivery along with rules and etiquette. Upon completion, students should be able to participate in recreational bowling. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 140 Bowling — Intermediate **0 2 1**
Prerequisites: PED 139
Corequisites: None
This course covers more advanced bowling techniques. Emphasis is placed on refining basic skills and performing advanced shots, spins, pace, and strategy. Upon completion, students should be able to participate in competitive bowling. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 142 Lifetime Sports **0 2 1**
Prerequisites: None
Corequisites: None
This course is designed to give an overview of a variety of sports activities. Emphasis is placed on the skills and rules necessary to participate in a variety of lifetime sports. Upon completion, students should be able to demonstrate an awareness of the importance of participating in lifetime sports activities. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 143 Volleyball — Beginning **0 2 1**
Prerequisites: None
Corequisites: None
This course covers the fundamentals of volleyball. Emphasis is placed on the basics of serving, passing, setting, spiking, blocking, and the rules and etiquette of volleyball. Upon completion, students should be able to participate in recreational volleyball. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 144 Volleyball — Intermediate **0 2 1**
Prerequisites: PED 143 or department approval
Corequisites: None
This course covers more advanced volleyball techniques. Emphasis is placed on refining skills and developing more advanced strategies and techniques. Upon completion, students should be able to participate in competitive volleyball. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 145 Basketball — Beginning **0 2 1**
Prerequisites: None
Corequisites: None
This course covers the fundamentals of basketball. Emphasis is placed on skill development, knowledge of the rules, and basic game strategy. Upon completion, students should be able to participate in recreational basketball. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 146 Basketball — Intermediate **0 2 1**
Prerequisites: PED 145
Corequisites: None
This course covers more advanced basketball techniques. Emphasis is placed on refining skills and developing more advanced strategies and techniques. Upon completion, students should be able to play basketball at a competitive level. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 148 Softball **0 2 1**
Prerequisites: None
Corequisites: None
This course introduces the fundamental skills and rules of softball. Emphasis is placed on proper techniques and strategies for playing softball. Upon completion, students should be able to participate in recreational softball. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 170 Backpacking **0 2 1**
Prerequisites: None
Corequisites: None
This course covers the proper techniques for establishing a campsite, navigating in the wilderness, and planning for an overnight trip. Topics include planning for meals, proper use of maps and compass, and packing and dressing for extended periods in the outdoors. Upon completion, students should be able to identify quality backpacking equipment, identify the principles of no-trace camping, and successfully complete a backpacking experience. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 171 Nature Hiking **0 2 1**
Prerequisites: None
Corequisites: None
This course provides instruction on how to equip and care for oneself on the trail. Topics include clothing, hygiene, trail ethics, and necessary equipment. Upon completion, students should be able to successfully participate in nature trail hikes. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 210 Team Sports **0 3 1**
Prerequisites: None
Corequisites: None
This course introduces the fundamentals of popular American team sports. Emphasis is placed on rules, equipment, and motor skills used in various sports. Upon completion, students should be able to demonstrate knowledge of the sports covered. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PED 220 Exercise for Physically Challenged **0 2 1**
Prerequisites: None
Corequisites: None
This course is designed to improve physical strength, endurance, and range of motion while focusing on individual needs. Emphasis is placed on exercises which are designed and adapted to serve those with special needs. Upon completion, students should be able to show improved physical fitness, body awareness, and an appreciation for their physical well-being. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Philosophy

PHI 210 History of Philosophy **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wollstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

PHI 215 Philosophical Issues **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course introduces fundamental issues in philosophy considering the views of classical and contemporary philosophers. Emphasis is placed on knowledge and belief, appearance and reality, determinism and free will, faith and reason, and justice and inequality. Upon completion, students should be able to identify, analyze, and critique the philosophical components of an issue. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

PHI 230 Introduction to Logic **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course introduces basic concepts and techniques for distinguishing between good and bad reasoning. Emphasis is placed on deduction, induction, validity, soundness, syllogisms, truth functions, predicate logic, analogical inference, common fallacies, and scientific methods. Upon completion, students should be able to analyze arguments, distinguish between deductive and inductive arguments, test validity, and appraise inductive reasoning. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PHI 240 Introduction to Ethics **3 0 3**
Prerequisites: ENG 111
Corequisites: None
This course introduces theories about the nature and foundations of moral judgments and applications to contemporary moral issues. Emphasis is placed on utilitarianism, rule-based ethics, existentialism, relativism versus objectivism, and egoism. Upon completion, students should be able to apply various ethical theories to individual moral issues such as euthanasia, abortion, crime and punishment, and justice. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

Physics

PHY 110 Conceptual Physics **3 0 3**
Prerequisites: None
Corequisites: PHY 110A
This course provides a conceptually-based exposure to the fundamental principles and processes of the physical world. Topics include basic concepts of motion, forces, energy, heat, electricity, magnetism, and the structure of matter and the universe. Upon completion, students should be able to describe examples and applications of the principles studied. Nonmathematical discussions of concepts and practical applications will be stressed. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

PHY 110A Conceptual Physics Lab **0 2 1**
Prerequisites: None
Corequisites: PHY 110
This course is a laboratory for PHY 110. Emphasis is placed on laboratory experiences that enhance materials presented in PHY 110. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in PHY 110. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

PHY 122 Applied Physics II **3 2 4**
Prerequisites: None
Corequisites: None
This algebra-based course introduces fundamental physical concepts as applied to industrial and service technology fields. Emphasis is placed on systems of units, problem-solving methods, graphical analysis, static electricity, AC and DC circuits, magnetism, transformers, AC and DC motors, and generators. Upon completion, students should be able to demonstrate an understanding of the principles studied as applied in industrial and service fields.

PHY 125 Health Sciences Physics **3 2 4**
Prerequisites: None
Corequisites: None
This course introduces fundamental physical principles as they apply to health technologies. Topics include motion, force, work, power, simple machines, and other topics as required by the student's area of study. Upon completion, students should be able to demonstrate an understanding of the fundamental principles covered as they relate to practical applications in the health sciences.

PHY 131 Physics — Mechanics **3 2 4**
Prerequisites: MAT 121
Corequisites: None
This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

PHY 140 Weather and Climate **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the nature, origin, processes, and dynamics of the earth's atmospheric environment. Topics include general weather patterns, climate, and ecological influences on the atmosphere. Upon completion, students should be able to demonstrate an understanding of weather formation, precipitation, storm patterns, and processes of atmospheric pollution. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PHY 151 College Physics I **3 2 4**
Prerequisites: MAT 161 or MAT 171
Corequisites: None
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

PHY 152 College Physics II **3 2 4**
Prerequisites: PHY 151
Corequisites: None
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

***PHY 251 General Physics I** **3 3 4**
Prerequisites: MAT 271
Corequisites: MAT 272
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

***PHY 252 General Physics II** **3 3 4**
Prerequisites: MAT 272 and PHY 251
Corequisites: None
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural science/mathematics.*

Plastics

PLA 110 Introduction to Plastics **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the plastics processing industry, including thermoplastics and thermosets. Emphasis is placed on the description, classification, and properties of common plastics and processes and current trends in the industry. Upon completion, students should be able to describe the differences between thermoplastics and thermosets and recognize the basics of the different plastic processes.

Political Science

POL 110 Introduction to Political Science **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces basic political concepts used by governments and addresses a wide range of political issues. Topics include political theory, ideologies, legitimacy, and sovereignty in democratic and nondemocratic systems. Upon completion, students should be able to discuss a variety of issues inherent in all political systems and draw logical conclusions in evaluating these systems. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

POL 120 American Government **3 0 3**
Prerequisites: None
Corequisites: None
This course is a study of the origins, development, structure, and functions of American national government. Topics include the constitutional framework, federalism, the three branches of government including the bureaucracy, civil rights and liberties, political participation and behavior, and policy formation. Upon completion, students should be able to demonstrate an understanding of the basic concepts and participatory processes of the American political system. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

POL 210 Comparative Government **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a cross-national perspective on the government and politics of contemporary nations such as Great Britain, France, Germany, and Russia. Topics include each country's historical uniqueness, key institutions, attitudes and ideologies, patterns of interaction, and current political problems. Upon completion, students should be able to identify and compare various nations' governmental structures, processes, ideologies, and capacity to resolve major problems. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

Psychology

PSY 110 Life Span Development **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an introduction to the study of human growth and development. Emphasis is placed on the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span and apply this knowledge to their specific field of study. *This course is intended for certificate, diploma, and A.A.S. degree programs.*

PSY 118 Interpersonal Psychology **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the basic principles of psychology as they relate to personal and professional development. Emphasis is placed on personality traits, communication/leadership styles, effective problem solving, and cultural diversity as they apply to personal and work environments. Upon completion, students should be able to demonstrate an understanding of these principles of psychology as they apply to personal and professional development. This course is intended for certificate, diploma, and A.A.S. degree programs.

PSY 150 General Psychology **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

PSY 237 Social Psychology **3 0 3**
Prerequisites: PSY 150 or SOC 210
Corequisites: None
This course introduces the study of individual behavior within social contexts. Topics include affiliation, attitude formation and change, conformity, altruism, aggression, attribution, interpersonal attraction, and group behavior. Upon completion, students should be able to demonstrate an understanding of the basic principles of social influences on behavior. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.*

PSY 241 Developmental Psychology **3 0 3**
Prerequisites: PSY 150
Corequisites: None
This course is a study of human growth and development. Emphasis is placed on major theories and perspectives as they relate to the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

PSY 243 Child Psychology **3 0 3**
Prerequisites: PSY 150
Corequisites: None
This course provides an overview of physical, cognitive, and psychosocial development from conception through adolescence. Topics include theories and research, interaction of biological and environmental factors, language development, learning and cognitive processes, social relations, and moral development. Upon completion, students should be able to identify typical and atypical childhood behavior patterns as well as appropriate strategies for interacting with children. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

PSY 281 Abnormal Psychology **3 0 3**
Prerequisites: PSY 150
Corequisites: None
This course provides an examination of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on terminology, classification, etiology, assessment, and treatment of the major disorders. Upon completion, students should be able to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

Radiography

RAD 110 Radiography Introduction and Patient Care **2 3 0 3**
Prerequisites: Enrollment in Radiography program
Corequisites: BIO 163, RAD 111, RAD 151, and RAD 182
This course provides an overview of the radiography profession and student responsibilities. Emphasis is placed on basic principles of patient care, radiation protection, technical factors, and medical terminology. Upon completion, students should be able to demonstrate basic skills in these areas.

RAD 111 RAD Procedures I **3 3 0 4**
Prerequisites: Enrollment in the Radiography program
Corequisites: BIO 163, RAD 110, RAD 151, and RAD 182
This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the chest, abdomen, extremities, spine, and pelvis. Upon completion, students should be able to demonstrate competence in these areas.

RAD 112 RAD Procedures II **3 3 0 4**
Prerequisites: BIO 163, RAD 110, RAD 111, RAD 151, and RAD 182
Corequisites: RAD 121 and RAD 161
This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the skull, bony thorax, and gastrointestinal, biliary, and urinary systems. Upon completion, students should be able to demonstrate competence in these areas.

RAD 121 Radiographic Imaging I **2 3 0 3**
Prerequisites: RAD 110, RAD 111, and RAD 151
Corequisites: RAD 112 and RAD 161
This course covers factors of image quality and methods of exposure control. Topics include density, contrast, recorded detail, distortion, technique charts, manual and automatic exposure control, and tube rating charts. Upon completion, students should be able to demonstrate an understanding of exposure control and the effects of exposure factors on image quality.

RAD 122 Radiographic Imaging II **1 3 0 2**
Prerequisites: RAD 112, RAD 121, and RAD 161
Corequisites: RAD 131 and RAD 171
This course covers image receptor systems and processing principles. Topics include film, film storage, processing, intensifying screens, grids, and beam limitation. Upon completion, students should be able to demonstrate the principles of selection and usage of imaging accessories to produce quality images.

RAD 131 Radiographic Physics I **1 3 0 2**
Prerequisites: RAD 112, RAD 121, and RAD 161
Corequisites: RAD 122 and RAD 171
This course introduces the fundamental principles of physics that underlie diagnostic X-ray production and radiography. Topics include electromagnetic waves, electricity and magnetism, electrical energy, and power and circuits as they relate to radiography. Upon completion, students should be able to demonstrate an understanding of basic principles of physics as they relate to the operation of radiographic equipment.

***RAD 151 RAD Clinical Education I** **0 0 6 2**
Prerequisites: Enrollment in the Radiography program
Corequisites: RAD 110, RAD 111, and RAD 182
This course introduces patient management and basic radiographic procedures in the clinical setting. Emphasis is placed on mastering positioning of the chest and extremities, manipulating equipment and applying principles of ALARA. Upon completion, students should be able to demonstrate successful completion of clinical objectives. This course is designed to be taken in conjunction with RAD 182, RAD Clinical Elective.

***RAD 161 RAD Clinical Education II** **0 0 15 5**
Prerequisites: RAD 110, RAD 111, RAD 151, and RAD 182
Corequisites: RAD 112 and RAD 121
This course provides additional experience in patient management and in more complex radiographic procedures. Emphasis is placed on mastering positioning of the spine, pelvis, head and neck, and thorax, and adapting procedures to meet patient variations. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

***RAD 171 RAD Clinical Education III** **0 0 12 4**
Prerequisites: RAD 112, RAD 121, and RAD 161
Corequisites: RAD 122 and RAD 131
This course provides experience in patient management specific to fluoroscopic and advanced radiographic procedures. Emphasis is placed on applying appropriate technical factors to all studies and mastering positioning of gastrointestinal and urological studies. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

***RAD 182 RAD Clinical Elective** **0 0 6 2**
Prerequisites: Enrollment in the Radiography program
Corequisites: RAD 110, RAD 111, and RAD 151
This course provides advanced knowledge of clinical applications. Emphasis is placed on enhancing clinical skills. Upon completion, students should be able to successfully complete the clinical course objectives. This course is designed to be taken in conjunction with RAD 151, RAD Clinical Education I.

RAD 211 RAD Procedures III **2 3 0 3**
Prerequisites: RAD 112 and RAD 122
Corequisites: RAD 231, RAD 241, and RAD 251
This course provides the knowledge and skills necessary to perform standard and specialty radiographic procedures. Emphasis is placed on radiographic specialty procedures, pathology, and advanced imaging. Upon completion, students should be able to demonstrate competence in these areas.

RAD 231 Radiographic Physics II **1 3 0 2**
Prerequisites: RAD 122, RAD 131, and RAD 171
Corequisites: RAD 211, RAD 241, and RAD 251
This course continues the study of physics that underlie diagnostic X-ray production and radiographic and fluoroscopic equipment. Topics include X-ray production, electromagnetic interactions with matter, X-ray devices, equipment circuitry, targets, filtration, and dosimetry. Upon completion, students should be able to demonstrate an understanding of the application of physical concepts as related to image production.

RAD 241 Radiation Protection **2 0 0 2**
Prerequisites: RAD 122, RAD 131, and RAD 171
Corequisites: RAD 211, RAD 231, and RAD 251
This course covers the principles of radiation protection and radiobiology. Topics include the effects of ionizing radiation on body tissues, protective measures for limiting exposure to the patient and personnel, and radiation monitoring devices. Upon completion, students should be able to demonstrate an understanding of the effects and uses of radiation in diagnostic radiology.

RAD 245 Radiographic Analysis **2 3 0 3**
Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251
Corequisites: RAD 261 and RAD 291
This course provides an overview of imaging concepts and introduces methods of quality assurance. Topics include a systematic approach for image evaluation and analysis of imaging service and quality assurance. Upon completion, students should be able to establish and administer a quality assurance program and conduct a critical review of images.

***RAD 251 RAD Clinical Education IV** **0 0 21 7**
Prerequisites: RAD 122, RAD 131, and RAD 171
Corequisites: RAD 211, RAD 231, and RAD 241
This course provides the opportunity to continue mastering all basic radiographic procedures and to attain experience in advanced areas. Emphasis is placed on equipment operation, pathological recognition, pediatric and geriatric variations, and a further awareness of radiation protection requirements. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

***RAD 261 RAD Clinical Education V** **0 0 21 7**
Prerequisites: RAD 211, RAD 231, RAD 241, and RAD 251
Corequisites: RAD 245 and RAD 291
This course is designed to enhance expertise in all radiographic procedures, patient management, radiation protection, and image production and evaluation. Emphasis is placed on developing an autonomous approach to the diversity of clinical situations and successfully adapting to those procedures. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 291 Selected Topics in Radiography **0 3 0 1**
Prerequisites: Enrollment in the Radiography program, RAD 211, RAD 231, RAD 241, and RAD 251
Corequisites: RAD 245 and RAD 261
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study. This course is designed to serve as a capstone course for the final semester Radiography student.

Real Estate Appraisal

***REA 101 Introduction to Real Estate Appraisal R-1** **2 0 2**
Prerequisites: None
Corequisites: None
This course introduces the entire valuation process, with specific coverage of residential neighborhood and property analysis. Topics include basic real property law, concepts of value and operation of real estate markets, mathematical and statistical concepts, finance, and residential construction/design. Upon completion, students should be able to demonstrate adequate preparation for REA 102. *This course is required for the Real Estate Appraisal certificate.*

***REA 102 Valuation Principles and Procedures R-2** **2 0 2**
Prerequisites: REA 101
Corequisites: None
This course introduces procedures used to develop an estimate of value and how the various principles of value relate to the application of such procedures. Topics include the sales comparison approach, site valuation, sales comparison, the cost approach, the income approach, and reconciliation. Upon completion, students should be able to complete the Uniform Residential Appraisal Report (URAR). *This course is required for the Real Estate Appraisal certificate.*

***REA 103 Applied Residential Property Valuation R-3** **2 0 2**
Prerequisites: REA 102
Corequisites: None
This course covers the laws and standards practiced by appraisers in the appraisal of residential 1-4 unit properties and small farms. Topics include Financial Institutions Reform and Recovery Enforcement Act (FIRREA), Uniform Standards of Professional Appraisal Practice (USPAP), and North Carolina statutes and rules. Upon completion, students should be able to demonstrate eligibility to sit for the NC Appraisal Board license trainee examination and to enroll in REA 201. *This course is required for the Real Estate Appraisal certificate.*

***REA 201 Introduction to Income Property Appraisal G-1 2 0 2**
Prerequisites: REA 103
Corequisites: None
This course introduces concepts and techniques used to appraise real estate income properties. Topics include real estate market analysis, property analysis and site valuation, how to use financial calculators, present value, NOI, and before-tax cash flow. Upon completion, students should be able to estimate income property values using direct capitalization and to sit for the NC Certified Residential Appraiser examination. *This course is required for the Real Estate Appraisal certificate.*

***REA 202 Advanced Income Capitalization Procedures G-2 2 0 2**
Prerequisites: REA 201
Corequisites: A financial calculator is required for this course.
This course expands direct capitalization techniques and introduces yield capitalization. Topics include yield rates, discounted cash flow, financial leverage, and traditional yield capitalization formulas. Upon completion, students should be able to estimate the value of income producing property using yield capitalization techniques. *This course is required for the Real Estate Appraisal certificate.*

***REA 203 Applied Income Property Valuation G-3 2 0 2**
Prerequisites: REA 202
Corequisites: None
This course covers the laws, rules, and standards pertaining to the principles and practices applicable to the appraisal of income properties. Topics include FIRREA, USPAP, Uniform Commercial and Industrial Appraisal Report (UCIAR) form, North Carolina statutes and rules, and case studies. Upon completion, students should be able to prepare a narrative report that conforms to the USPAP and sit for the NC Certified General Appraisal examination. *This course is required for the Real Estate Appraisal certificate.*

Reading

RED 080 Introduction to College Reading 3 2 4
Prerequisites: ENG 075 or RED 070 or placement
Corequisites: None
This course introduces effective reading and inferential thinking skills in preparation for RED 090. Emphasis is placed on vocabulary, comprehension, and reading strategies. Upon completion, students should be able to determine main ideas and supporting details, recognize basic patterns of organization, draw conclusions, and understand vocabulary in context. *This course does not satisfy the developmental reading prerequisite for ENG 111.*

RED 090 Improved College Reading 3 2 4
Prerequisites: ENG 085 or RED 080 or placement
Corequisites: None
This course is designed to improve reading and critical thinking skills. Topics include vocabulary enhancement; extracting implied meaning; analyzing author's purpose, tone, and style; and drawing conclusions and responding to written material. Upon completion, students should be able to comprehend and analyze college-level reading material. *This course satisfies the developmental reading prerequisite for ENG 111.*

Religion

REL 110 World Religions **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the world's major religious traditions. Topics include Primal religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

REL 211 Intro to Old Testament **3 0 3**
Prerequisites: None
Corequisites: None
This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

REL 212 Intro to New Testament **3 0 3**
Prerequisites: None
Corequisites: None
This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

REL 221 Religion in America **3 0 3**
Prerequisites: None
Corequisites: None
This course is an examination of religious beliefs and practice in the United States. Emphasis is placed on mainstream religious traditions and non-traditional religious movements from the colonial period to the present. Upon completion, students should be able to recognize and appreciate the diversity of religious traditions in America. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

Real Estate

***RLS 112 Real Estate Fundamentals** **5 0 5**
Prerequisites: None
Corequisites: None
This course provides basic instruction in real estate principles and practices. Topics include law, finance, brokerage, closing, valuation, management, taxation, mathematics, construction, land use, property insurance, and NC License Law and Commission Rules. Upon completion, students should be able to demonstrate basic knowledge and skills necessary for real estate sales.

RLS 113 Real Estate Mathematics **2 0 2**
Prerequisites: None
Corequisites: None
This course provides basic instruction in business mathematics applicable to real estate situations. Topics include area computations, percentage of profit/loss, bookkeeping and accounting methods, appreciation and depreciation, financial calculations and interest yields, property valuation, insurance, taxes, and commissions. Upon completion, students should be able to demonstrate proficiency in applied real estate mathematics.

RLS 117 Real Estate Broker **4 0 4**
Prerequisites: RLS 112 or current real estate license
Corequisites: None
This course consists of advanced-level instruction on a variety of topics related to real estate law and brokerage practices. Topics include real estate brokerage, finance and sales, RESPA, fair housing issues, selected N.C. Real Estate License law and N.C. Real Estate Commission Rule issues. Upon completion, students should be able to demonstrate knowledge of real estate brokerage, law, and finance.

***RLS 216 Land Use Controls** **2 0 2**
Prerequisites: RLS 112
Corequisites: None
This course analyzes private and public issues germane to the "highest and best use" of real property. Topics include the property survey, zoning ordinances, financing, and other considerations appropriate to the development of real property. Upon completion, students should be able to explain public policies and considerations regarding the uses and development of private property.

Substance Abuse

***SAB 110 Substance Abuse Overview** **3 0 0 3**
Prerequisites: None
Corequisites: None
This course provides an overview of the core concepts in substance abuse and dependence. Topics include the history of drug use/abuse, effects on societal members, treatment of addiction, and preventative measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment.

Sociology

SOC 210 Introduction to Sociology **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

SOC 213 Sociology of the Family **3 0 3**
Prerequisites: None
Corequisites: None
This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse life-styles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces which influence its development and change. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

SOC 215 Group Processes **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces group processes and dynamics. Emphasis is placed on small group experiences, roles and relationships within groups, communication, cooperation and conflict resolution, and managing diversity within and among groups. Upon completion, students should be able to demonstrate the knowledge and skills essential to analyze group interaction and to work effectively in a group context. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

SOC 220 Social Problems **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment. Upon completion, students should be able to recognize, define, analyze, and propose solutions to these problems. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

SOC 225 Social Diversity **3 0 3**
Prerequisites: None
Corequisites: None
This course provides a comparison of diverse roles, interests, opportunities, contributions, and experiences in social life. Topics include race, ethnicity, gender, sexual orientation, class, and religion. Upon completion, students should be able to analyze how cultural and ethnic differences evolve and how they affect personality development, values, and tolerance. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

SOC 232 Social Context of Aging **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an overview of the social implications of the aging process. Emphasis is placed on the roles of older adults within families, work and economics, politics, religion, education, and health care. Upon completion, students should be able to identify and analyze changing perceptions, diverse lifestyles, and social and cultural realities of older adults. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

SOC 234 Sociology of Gender **3 0 3**
Prerequisites: None
Corequisites: None
This course examines contemporary roles in society with special emphasis on recent changes. Topics include sex role specialization, myths and stereotypes, gender issues related to family, work, and power. Upon completion, students should be able to analyze modern relationships between men and women. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

SOC 240 Social Psychology **3 0 3**
Prerequisites: None
Corequisites: None
This course examines the influence of culture and social groups on individual behavior and personality. Emphasis is placed on the process of socialization, communication, conformity, deviance, interpersonal attraction, intimacy, race and ethnicity, small group experiences, and social movements. Upon completion, students should be able to identify and analyze cultural and social forces that influence the individual in a society. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral science.*

SOC 254 Rural and Urban Sociology **3 0 3**
Prerequisites: None
Corequisites: None
This course applies sociological concepts to a comparative study of major social issues facing contemporary rural and urban America. Emphasis is placed on growth and development patterns, ecological factors, social organizations, social controls, and processes of change. Upon completion, students should be able to illustrate the differences and similarities that exist between urban and rural environments as they resolve contemporary issues. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Sonography

SON 110 Introduction to Sonography **1 3 3 3**
Prerequisites: None
Corequisites: SON 130
This course provides an introduction to medical sonography. Topics include applications, sonographic terminology, history, patient care, ethics, and basic skills. Upon completion, students should be able to define professionalism and sonographic applications and perform basic patient care skills and preliminary scanning techniques.

SON 111 Sonographic Physics **3 3 0 4**
Prerequisites: CVS 163 or SON 110
Corequisites: None
This course introduces ultrasound physical principles, bioeffects, and sonographic instrumentation. Topics include sound wave mechanics, transducers, sonographic equipment, Doppler physics, bioeffects, and safety. Upon completion, students should be able to demonstrate knowledge of sound wave mechanics, transducers, sonography equipment, the Doppler effect, bioeffects, and safety.

SON 120 SON Clinical Ed I **0 0 15 5**
Prerequisites: SON 11O
Corequisites: None
This course provides active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 121 SON Clinical Ed II **0 0 15 5**
Prerequisites: SON 120
corequisites: None
This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations

SON 130 Abdominal Sonography I **2 3 0 3**
Prerequisites: None
Corequisites: None
This course introduces abdominal and small parts sonography. Emphasis is placed on the sonographic anatomy of the abdomen and small parts with correlated laboratory exercises. Upon completion, students should be able to recognize and acquire basic abdominal and small parts images.

SON 131 Abdominal Sonography II **1 3 0 2**
Prerequisites: SON 130
Corequisites: None
This course covers abdominal and small parts pathology recognizable on sonograms. Emphasis is placed on abnormal sonograms of the abdomen and small parts with correlated sonographic cases. Upon completion, students should be able to recognize abnormal pathological processes in the abdomen and on small parts sonographic examinations.

SON 140 Gynecological Sonography **2 0 0 2**
Prerequisites: SON 110
Corequisites: None
This course is designed to relate gynecological anatomy and pathology to sonography. Emphasis is placed on gynecological relational anatomy, endovaginal anatomy, and gynecological pathology. Upon completion, students should be able to recognize normal and abnormal gynecological sonograms.

SON 220 SON Clinical Ed III **0 0 24 8**
Prerequisites: SON 121
Corequisites: None
This course provides continued active participation in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 221 SON Clinical Ed IV **0 0 24 8**
Prerequisites: SON 220
Corequisites: None
This course provides continued active participation off campus in clinical sonography. Emphasis is placed on imaging, processing, and technically evaluating sonographic examinations. Upon completion, students should be able to image, process, and evaluate sonographic examinations.

SON 225 Case Studies **0 3 0 1**
Prerequisites: SON 110 or CVS 163
Corequisites: None
This course offers the opportunity to present interesting cases found during clinical education. Emphasis is placed on presentation methods which integrate patient history, laboratory results, and sonographic findings with reference to current literature. Upon completion, students should be able to correlate information necessary for complete presentation of case studies.

SON 241 Obstetrical Sonography I **2 0 0 2**
Prerequisites: SON 110
Corequisites: None
This course covers normal obstetrical sonography techniques, the normal fetal environment, and abnormal first trimester pregnancy states. Topics include gestational dating, fetal anatomy, uterine environment, and first trimester complications. Upon completion, students should be able to produce gestational sonograms which document age, evaluate the uterine environment, and recognize first trimester complications.

SON 242 Obstetrical Sonography II **2 0 0 2**
Prerequisites: SON 241
Corequisites: None
This course covers second and third trimester obstetrical complications and fetal anomalies. Topics include abnormal fetal anatomy and physiology and complications in the uterine environment. Upon completion, students should be able to identify fetal anomalies, fetal distress states, and uterine pathologies.

SON 250 Vascular Sonography **1 3 0 2**
Prerequisites: SON 111
Corequisites: None
This course provides an in-depth study of the anatomy and pathology of the vascular system. Topics include peripheral arterial, peripheral venous, and cerebrovascular disease testing. Upon completion, students should be able to identify normal vascular anatomy and recognize pathology of the vascular system.

SON 289 Sonographic Topics **2 0 0 2**
Prerequisites: SON 220
Corequisites: SON 221
This course provides an overview of sonographic topics in preparation for certification examinations. Emphasis is placed on registry preparation. Upon completion, students should be able to demonstrate a comprehensive knowledge of sonography and be prepared for the registry examinations.

Spanish

SPA 111 Elementary Spanish I **3 0 3**
Prerequisites: None
Corequisites: None
This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

SPA 112 Elementary Spanish II **3 0 3**
Prerequisites: SPA 111
Corequisites: None
This course is a continuation of SPA 111 focusing on the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Lab practice is expected of students. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

SPA 141 Culture and Civilization **3 0 3**
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore issues related to the Hispanic world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Hispanic world. This course is taught in English. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

SPA 211 Intermediate Spanish I **3 0 3**
Prerequisites: SPA 112
Corequisites: None
This course provides a review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Lab practice is expected of students. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

SPA 212 Intermediate Spanish II **3 0 3**
Prerequisites: SPA 211
Corequisites: None
This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Lab practice is expected of students. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

SPA 221 Spanish Conversation **3 0 3**
Prerequisites: SPA 212
Corequisites: None
This course provides an opportunity for intensive communication in spoken Spanish. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. *This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.*

Surveying

SRV 110 Surveying I **2 6 4**
Prerequisites: EGR 115 and MAT 121
Corequisites: None
This course introduces the theory and practice of plane surveying. Topics include measuring distances and angles, differential and profile leveling, compass applications, topography, and mapping. Upon completion, students should be able to use/care for surveying instruments, demonstrate field note techniques, and apply the theory and practice of plane surveying.

SRV 111 Surveying II **2 6 4**
Prerequisites: SRV 110
Corequisites: None
This course introduces route surveying and roadway planning and layout. Topics include simple, compound, reverse, spiral, and vertical curves; geometric design and layout; planning of cross-section and grade line; drainage; earthwork calculations; and mass diagrams. Upon completion, students should be able to calculate and lay out highway curves; prepare roadway plans, profiles, and sections; and perform slope staking.

SRV 210 Surveying III **2 6 4**
Prerequisites: SRV 110
Corequisites: None
This course introduces boundary surveying, land partitioning, and calculations of areas. Topics include advanced traverses and adjustments, preparation of survey documents, and other related topics. Upon completion, students should be able to research, survey, and map a boundary.

SRV 220 Surveying Law **2 2 3**
Prerequisites: SRV 110
Corequisites: None
This course introduces the law as related to the practice of surveying. Topics include surveyors' responsibilities, deed descriptions, title searches, eminent domain, easements, weight of evidence, riparian rights, and other related topics. Upon completion, students should be able to identify and apply the basic legal aspects associated with the practice of land surveying.

SRV 230 Subdivision Planning **1 6 3**
Prerequisites: SRV 111, SRV 210, and CIV 211
Corequisites: None
This course covers the planning aspects of residential subdivisions from analysis of owner and municipal requirements to plat layout and design. Topics include municipal codes, lot sizing, roads, incidental drainage, esthetic considerations, and other related topics. Upon completion, students should be able to prepare a set of subdivision plans.

SRV 240 Topographic/Site Surveying **2 6 4**
Prerequisites: None
Corequisites: SRV 210
This course covers topographic, site, and construction surveying. Topics include topographic mapping, earthwork, site planning, construction staking, and other related topics. Upon completion, students should be able to prepare topographic maps and site plans and locate and stake out construction projects.

SRV 250 Advanced Surveying **2 6 4**
Prerequisites: SRV 111
Corequisites: None
This course covers advanced topics in surveying. Topics include photogrammetry, astronomical observations, coordinate systems, error theory, GPS, GIS, Public Land System, and other related topics. Upon completion, students should be able to apply advanced techniques to the solution of complex surveying problems.

SRV 260 Field and Office Practices **1 3 2**
Prerequisites: Completion of three semesters of the Surveying Technology program
Corequisites: None
This course covers surveying project management, estimating, and responsibilities of surveying personnel. Topics include record-keeping, starting and operating a surveying business, contracts, regulations, taxes, personnel management, and professional ethics. Upon completion, students should be able to understand the requirements of operating a professional land surveying business.

Surgical Technology*

*Pending NCCCS State Board approval

SUR 110 Introduction to Surgical Technology **3 0 0 3**
Prerequisites: None
Corequisites: SUR 111
This course provides a comprehensive study of the operative environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in surgical technology. Topics include historical development, professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incision sites, and physiology of wound healing. Upon completion, students should be able to apply theoretical knowledge of the course topics to the operative environment.

SUR 111 Periop Patient Care **5 6 0 7**
Prerequisites: None
Corequisites: SUR 110
This course provides theoretical knowledge for the application of essential operative skills during the perioperative phase. Topics include surgical asepsis, sterilization/disinfection, and perioperative patient care. Upon completion, students should be able to demonstrate the principles and practices of aseptic technique, sterile attire, basic case preparation, and other relevant skills.

SUR 122 Surgical Procedures I **5 3 0 6**
Prerequisites: SUR 110 and SUR 111
Corequisites: SUR 123 or STP 101
This course introduces a comprehensive study of surgical procedures in the following specialties: general, gastrointestinal, obstetrical/gynecology, urology, otorhinolaryngology, and plastics/reconstructive. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing theoretical knowledge of patient care, instrumentation, supplies and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics.

SUR 123 SUR Clinical Practice I **0 0 21 7**
Prerequisites: SUR 110 and SUR 111
Corequisites: SUR 122
This course provides clinical experience with a variety of perioperative assignments to build upon skills learned in SUR 111. Emphasis is placed on the scrub and circulating roles of the surgical technologist including aseptic technique and basic case preparation for selected surgical procedures. Upon completion, students should be able to prepare, assist with, and dismantle basic surgical cases in both the scrub and circulating roles.

SUR 134 Surgical Procedures II **5 0 0 5**
Prerequisites: SUR 123 or STP 101
Corequisites: None
This course introduces orthopedic, neurosurgical, peripheral vascular, thoracic, cardiovascular, and ophthalmology surgical specialties. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics.

SUR 135 SUR Clinical Practice II **0 0 12 4**
Prerequisites: SUR 123
Corequisites: SUR 134 and SUR 137
This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist.

SUR 137 Prof Success Prep **1 0 0 1**
Prerequisites: SUR 123
Corequisites: SUR 134 and SUR 135
This course provides job-seeking skills and an overview of theoretical knowledge in preparation for certification. Topics include test-taking strategies, resume preparation, and interviewing techniques. Upon completion, students should be able to prepare a resume, demonstrate appropriate interview techniques, and identify strengths and weaknesses in preparation for certification.

Social Work

***SWK 110 Introduction to Social Work** **3 0 0 3**
Prerequisites: None
Corequisites: None
This course examines the historical development, values, orientation, and professional standards of social work and focuses on the terminology and broader systems of social welfare. Emphasis is placed on the various fields of practice including those agencies whose primary function is financial assistance, corrections, mental health, and protective services. Upon completion, students should be able to demonstrate an understanding of the knowledge, values, and skills of the social work professional. *This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.*

***SWK 113 Working with Diversity** **3 0 0 3**
Prerequisites: None
Corequisites: None
This course examines and promotes understanding, sensitivity, awareness, and knowledge of human diversity. Emphasis is placed on professional responsibilities, duties, and skills critical to multicultural human services practice. Upon completion, students should be able to integrate and expand knowledge, skills, and cultural awareness relevant to diverse populations. *This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.*

SWK 115 Community Resources **2 2 0 3**
Prerequisites: None
Corequisites: None
This course introduces community resources essential to social work practice. Emphasis is placed on awareness of and interaction with community service personnel. Upon completion, students should be able to identify resources and assess critical community needs. *This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.*

***SWK 214 Social Work Law** **3 0 0 3**
Prerequisites: SWK 110
Corequisites: None
This course introduces the major provisions of social services law, current trends, legislative developments, and court procedures. Emphasis is placed on the interpretation of the laws and court decisions related to various social services populations. Upon completion, students should be able to interpret these laws and their implications for social services practice. *This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.*

***SWK 220 SWK Issues in Client Services** **3 0 0 3**
Prerequisites: None
Corequisites: None
This course introduces the professional standards, values, and issues in social services. Topics include confidentiality, assessment of personal values, professional responsibilities, competencies, and ethics. Upon completion, students should be able to understand and discuss multiple ethical issues applicable to social work and apply various decision-making models to current issues. *This course is a unique concentration requirement of the Social Service concentration in the Human Services Technology program.*

Welding

WLD 110 Cutting Processes **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.

WLD 111 Oxy-Fuel Welding **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces the oxy-fuel welding process. Topics include safety, proper equipment setup, and operation of oxy-fuel welding equipment with emphasis on bead application, profile, and discontinuities. Upon completion, students should be able to oxy-fuel weld fillets and grooves on plate and pipe in various positions.

WLD 112 Basic Welding Processes **1 3 2**
Prerequisites: None
Corequisites: None
This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.

WLD 115 SMAW (Stick) Plate **2 9 5**
Prerequisites: None
Corequisites: None
This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

WLD 116 SMAW (Stick) Plate/Pipe **1 9 4**
Prerequisites: WLD 115
Corequisites: None
This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.

WLD 121 GMAW (MIG) FCAW/Plate **2 6 4**
Prerequisites: None
Corequisites: None
This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.

WLD 122 GMAW (MIG) Plate/Pipe **1 6 3**
Prerequisites: WLD 121
Corequisites: None
This course is designed to enhance skills with the gas metal arc (MIG) welding process. Emphasis is placed on advancing skills with the GMAW process making groove welds on carbon steel plate and pipe in various positions. Upon completion, students should be able to perform groove welds with prescribed electrodes on various joint geometry

WLD 131 GTAW (TIG) Plate **2 6 4**
Prerequisites: None
Corequisites: None
This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

WLD 132 GTAW (TIG) Plate/Pipe **1 6 3**
Prerequisites: WLD 131
Corequisites: None
This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry.

WLD 141 Symbols and Specifications **2 2 3**
Prerequisites: None
Corequisites: None
This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

WLD 143 Welding Metallurgy **1 2 2**
Prerequisites: None
Corequisites: None
This course introduces the concepts of welding metallurgy. Emphasis is placed on basic metallurgy, effects of welding on various metals, and metal classification and identification. Upon completion, students should be able to understand basic metallurgy, materials designation, and classification systems used in welding.

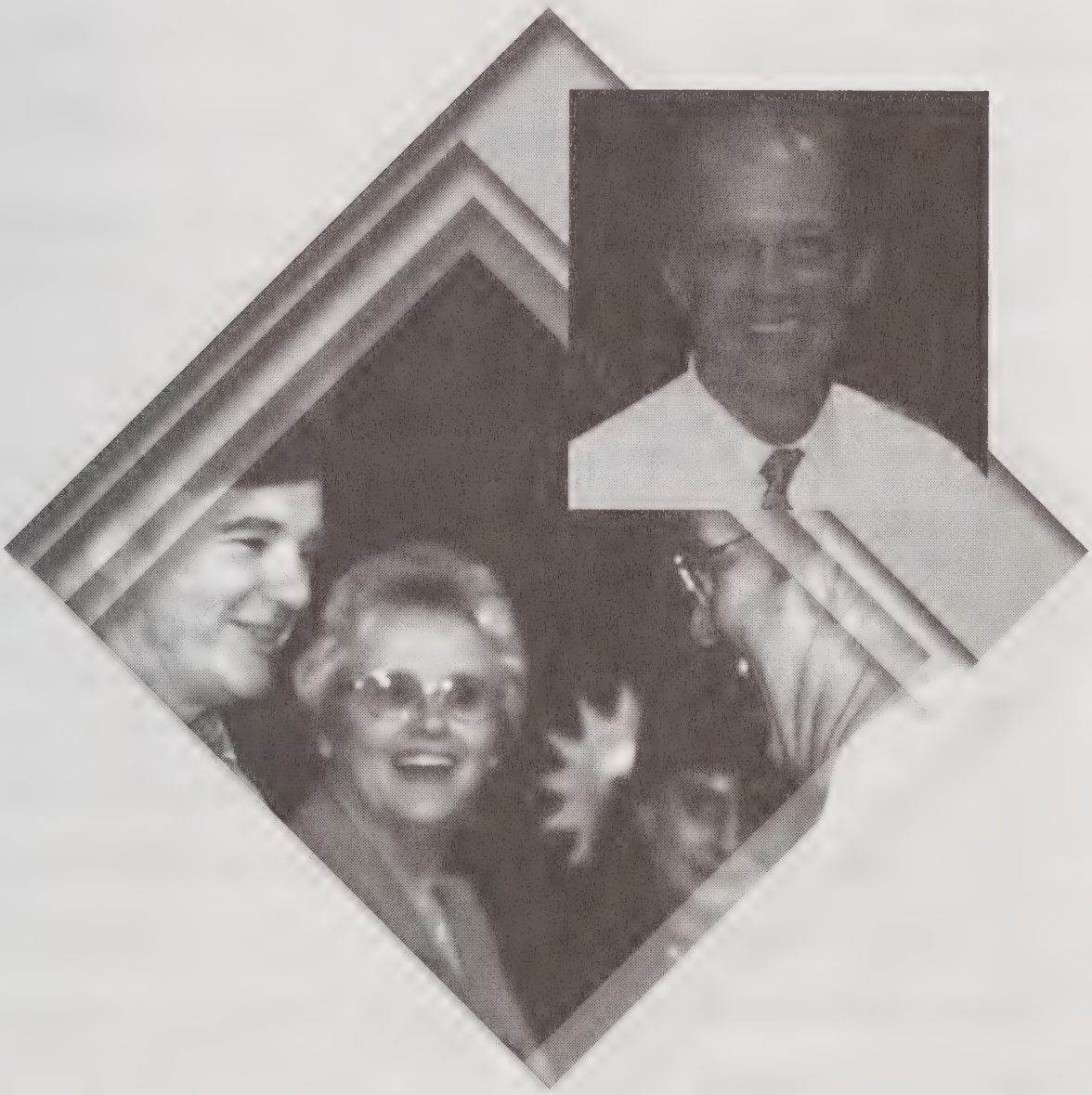
WLD 151 Fabrication I **2 6 4**
Prerequisites: WLD 110, WLD 115, WLD 116, and WLD 131
Corequisites: None
This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment.

WLD 221 GMAW (MIG) Pipe **1 6 3**
Prerequisites: None
Corequisites: None
This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform GMAW welds to applicable codes on pipe with prescribed electrodes in various positions.

WLD 261 Certification Practices **1 3 2**
Prerequisites: WLD 115, WLD 121, and WLD 131
Corequisites: None
This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for pre-qualified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes.

WLD 262 Inspection and Testing **2 2 3**
Prerequisites: None
Corequisites: None
This course introduces destructive and nondestructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and nondestructive testing processes.

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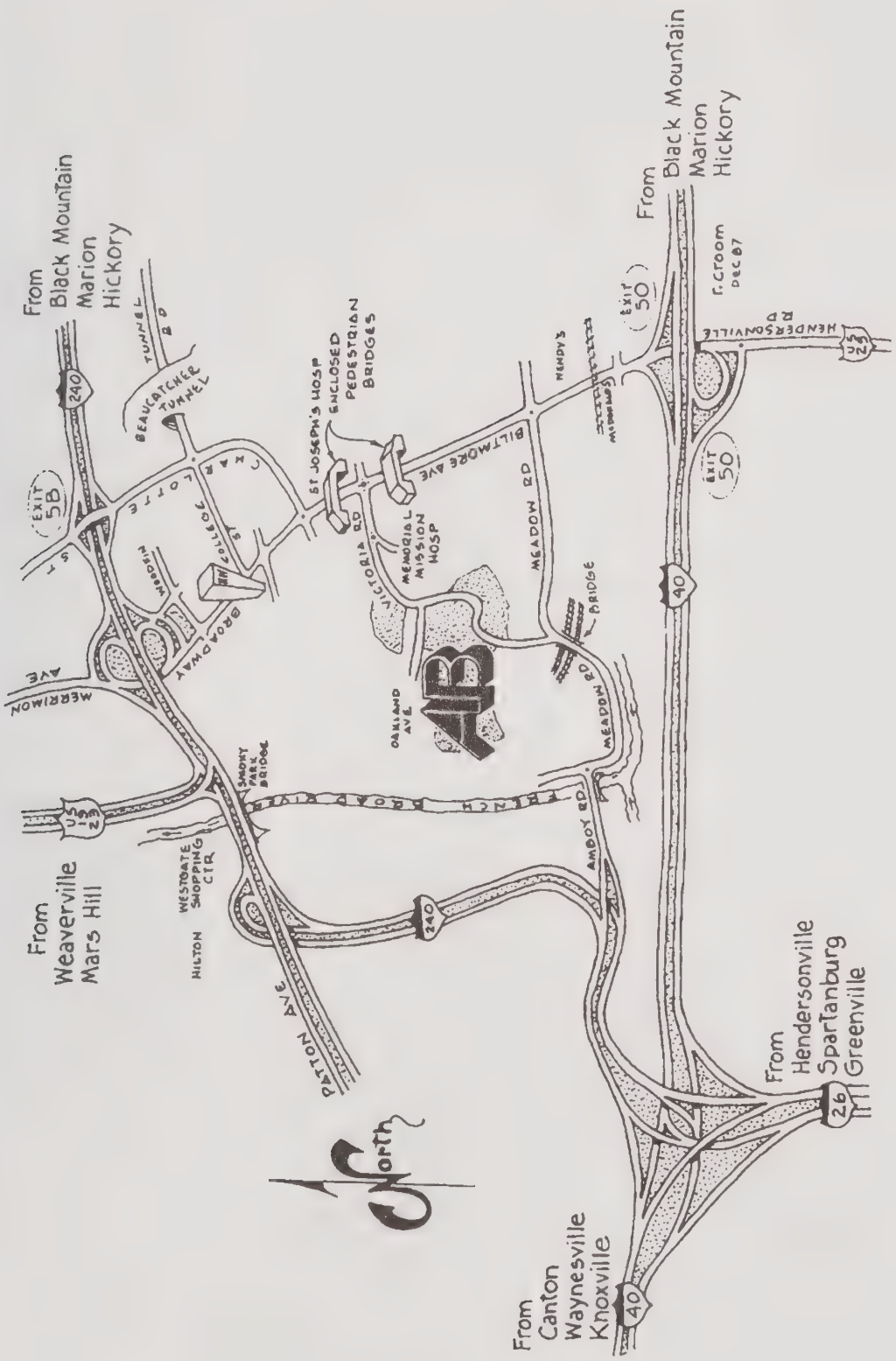
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